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ADDRESS.

CHAIRMAN'S ADDRESS.

Delivered in the Section on Surgery and Anatomy, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, June 1-4, 1897.

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NEW YORK, N.Y.

When I returned home after the meeting in Atlanta last year, I was most pleasantly surprised to learn from the papers that I had been selected to preside over this Section. I wish to thank you most heartily for the great honor which you have done me in making me Chairman, and especially so for having placed me in this position at this meeting, the most important one which has ever been held by the AMERICAN MEDICAL ASSOCIATION, celebrating, as it does, its fiftieth anniversary.

The number of papers which have been offered for the consideration of the Section has been so large that I have obliged, much against my will, to decline a great many as all the available time at our disposal had already been fully occupied by papers which had been presented at an earlier date. But I trust the authors will realize that, as our time is limited and as it is impossible to do more than a certain amount in this space, my action was the result of necessity. In my own opinion, it is a mistake to have so large a number of papers as to render it impossible to grant full discussion to those of marked interest, and I think that much more benefit is had from these meetings, if we confine our attention to a smaller number of carefully prepared and thoroughly scientific papers, which enter exhaustively into the consideration of a topic, and have the same discussed by men of experience, rather than to consume our time with the consideration of so large a number of hastily written, incomplete articles, that no opportunity is left for discussion. Oftentimes, the discussion is of as much value as the paper itself, especially so if the author has taken the precaution to send an abstract of his views to various men of experience, in order that they may prepare themselves in advance on the different points which will be brought up, as it frequently happens that time is required to thoughtfully consider new propositions before they can be discussed with intelligence.

From personal experience as Secretary in this Section for two years, in addition to that which I have derived as Chairman this year, I am convinced that we can find a more intelligent way of preparing our program than that at present in force.

That part of the By-Laws relating to papers is: "It shall be the duty of every member, who proposes to read a paper or report to any of the Sections to forward the paper or a title indicative of its contents and its length, to the Secretary of the Section at least one month before the annual meeting at which the paper is to be read. It shall be the duty of the Chairman and the Secretary of each Section to communicate the same information to the Chairman of the Committee of Arrangements concerning such papers and reports as may come into their possession or knowledge for their respective Sections the same length of time before the annual meeting. No paper shall occupy more than twenty minutes. Such papers shall be referred to a subcommittee for their examination, who shall be allowed thirty days for such examination, at the end of which time they shall forward the paper to the Board of Trustees with such recommendation as they may deem proper. . . Every paper shall be the exclusive property of the ASSOCIATION, and be published for its exclusive benefit."

This section should be modified to require the title of the paper to be sent to the Secretary one month in advance and a copy of the paper two weeks in advance of the meeting.

The present method leaves the Chairman largely in the dark as to the amount of work which may be brought before the Section, for unless the copies of the papers to be read before the Section are in the hands of the Secretary at the commencement of the session, it often happens that the gentlemen who have promised papers fail to appear, and the regularity of the proceedings is very seriously embarrassed. The audience also is put to much inconvenience, for the members of the ASSOCIATION, in order to make the best possible disposition of their time, may linger in some other Section to listen to a paper which interests them, coming to this Section at a time when, judging from the program, they might reasonably expect a certain paper to be reached, only to find that it has already been finished in consequence of the absence of a number of other speakers who should according to the program have preceded the paper in question.

It seems to the Chair that the position taken this morning by our President was without question the correct one, that the county societies should be the place for maiden efforts, that those who were thought worthy of places as delegates to the State societies could there present their more mature ideas, while the time of the Sections of the National ASSOCIATION should not be occupied, except by papers of exceptional worth. Papers of this character are not prepared over night and those who desire to appear before this National body should be made to understand that if their papers are not of sufficient importance to justify them in preparing them two weeks in advance of the time of meeting, it is not likely that they will be of sufficient interest to the Section to justify their occupying space on the program.

Another point to which I would like to call your attention is that Article of the By-Laws which states that all papers read before the Sections are the exclusive property of the ASSOCIATION and to be published

for its benefit. The ASSOCIATION resolved some seventeen years ago to cease publishing its Transactions in book form and to issue a weekly journal which should contain all the papers read before the ASSOCIATION and its Sections. If we do not support the JOURNAL how can we expect it to succeed, and unless it has exclusive control of the papers presented before the Sections, it is at once deprived of a most vital source of strength and, in consequence, instead of being the most potent factor in making the ASSOCIATION a power in the land, it is handicapped in its competition with other journals by the very men who should be most interested in its support and who should realize that in advancing its interests they are advancing their own, even if they are unwilling to assist from any less selfish motives.

The last few years have witnessed many notable advances in surgery and perhaps the most striking departure from the older methods is the effort to substitute prevention for cure, and following in the steps of Jenner to endeavor by means of the injection of various immunizing agents not only to arrest the ravages of septicemia, erysipelas, tetanus and surgical infectious diseases in general but even to prevent their occurrence by prophylactic injections.

The various reports on this subject are somewhat at variance and the personal equation of the observer must be taken into account. Yet it seems clear that while the successful cases reported are but few, and in some of them doubtless the favorable termination is not to be attributed to the means employed, still certain results have been accomplished and the field of the surgeon seems to be widening day by day and his ability to cope with deadly forms of disease in future will probably be enormously increased through the revival of interest in preventive surgery.

Under the head of preventive surgery come also the new antiseptics which have been brought into use, of which I will mention but a few; loretin, a dusting powder which is free from odor and has proved itself of great use; the oxycyanid of mercury, whose great advantage over the bichlorid of mercury is its non-corrosive action on instruments; calcium permanganate, which is said to be more powerful than the potassium salt, and the formalin-gelatin treatment of Schleich, which promises much in the treatment of infected wounds. This same observer has presented us with eucain, a substitute for cocain as a local anesthetic, which is safer in its effects and produces anesthesia of a more lasting nature.

In conservative surgery we have another instance of the ingenuity of McBurney, who in a case of sarcoma of the radius, instead of amputating the elbow, removed the sarcomotous radius, did a circular amputation in the middle of the forearm and sewed the biceps tendon to the base of the coronoid process of the ulnar thus giving the patient a stump over which he had voluntary control.

Our English brethren have been busy in abdominal surgery and Golding Bird and Harrison Cripps have both suggested plans for avoiding leaking after gastrostomy. Bird makes a small hole in the stomach and, dilating it with a pair of dressing forceps, inserts a rubber tube, claiming that the subsequent contraction of the stomach wall upon the tube prevents the troublesome leaking which so often follows when the opening in the stomach is made larger than the tube and afterward sewed up. Cripps plugs the hole in the stomach or intestines by a piece of rubber tissue as thick as a shilling and a good deal larger than the opening. This he inserts by means of a pair of dressing forceps, having rolled it up After it is inserted the forceps are removed, the rubber disk resumes its normal shape and is pulled tight against the opening by a thread which passes through its center and is fastened to a pin wrapped in gauze and then tied.

In this country Weir and Foote have successfully operated on a round ulcer of the stomach, showing the wisdom of interfering before it is too late for the surgeon to be of use.

The interior of the bowel has also received attention and Stephan has established an artificial anus in a case of obstinate dysentery which had resisted medication, and applied local treatment to the diseased area through this opening, subsequently closing the wound when the dysentery had been cured.

Whenever any operation or invention is good it invites criticism and is modified in various ways to meet the views of the critics. The Murphy button is no exception to this rule, and no less than three different buttons or bobbins of decalcified bone have been recently devised to take its place. The suggestions coming from Chaput, Hayes of Dublin and Jackson Clark of London.

The treatment of diseases of the intestines brings to mind the subject of hernia, and it has always seemed strange to me that we should couple the operation for curing hernia by the reconstruction of the inguinal canal with the name of a foreigner instead of with that of Marcy, who practiced and taught this operation for years without having it generally adopted until it had made a trip across the ocean and returned with a foreign endorsement. I trust that some time in the future the surgeons of this country will give our former President the credit which he deserves.

The urinary tract has also given us examples of progressive surgery, Fenwick having successfully transplanted part of a sheep's urethra to close a defect in man, while the ureters have been the site of many successful surgical procedures both at home and abroad, the chief work of this country having been done by Kelly, Roberts and Van Hook. The kidney itself is now often spared when a few years ago it would have been removed, and in place of extirpation many cases, when a large part of the kidney is healthy, are now treated by the removal of such parts as are diseased. In hydronephrosis Fenger has been successful in the removal of valve-like formations from the pelvis of the kidney, which prevented the free egress of urine.

Brain surgery still continues to be most daring, and although the results of some of the operations speak more for the thoroughness of technique which renders them possible than for diagnostic skill and reasoning powers of the operator, some wonderful results have been achieved, as in the case of removal of cerebellar tumor from a child 4 years of age, reported by Parkin to the Clinical Society of London.

In the surgery of the vascular system distinct advances have been made. The heart itself has for the second time been sutured successfully but a few months ago as reported by Rehn of Frankfurt, Germany, while the experiments of Murphy have shown that veins and arteries can not only be sutured with success when torn, as had been done in previous years, but that injured portions can be resected and the continuity of the vessel restored by end to end anastomosis with invagination. He has also successfully

carried out the same operation in man, though perhaps our scientific brethren on the other side of the water might object to accepting the later cases as the patency of the vessels has not yet been demonstrated on the postmortem table.

The antivivisectionists also might object to the series of experiments which lead up to this successful operation as they have to those of the various workers whose experimental researches have done so much to make clear the hidden mysteries of disease during the past decade, and I feel that a word of warning may not be out of place here to all of you who, relying on the intelligence of our legislative bodies and their certainty of doing the right thing at the right time, believe that the bill now pending before Congress to limit the practice of vivisection will not pass. Unless the medical profession exercises the same assiduity in opposing it that the advocates of the bill show in pushing their scheme both before Congress and elsewhere the bill is very certain to become a law and the entering wedge for acts preventing animal experimentation altogether.

Perhaps the most striking advance that has been made in surgery during the past year has been the discovery of the X rays. It is not my intention to enter elaborately into a discussion of the phenomena which were first described by Professor Roentgen of Wurzburg, in the beginning of the past year, but to deal more especially with their practical application in the field of surgery.

One of the first things that was done, simultaneously, by a number of observers in different parts of the world, was to manufacture apparatus by which the effect of these rays could be seen by the naked eye, in the shape of an opaque box fitted closely to the face, having the surface opposite the eyes coated with a flourescent substance, so that when this surface was turned toward the source of the X rays it became luminous and the shadows of the hand or any other substance could be readily observed. Barium platinocyanid, which Roentgen employed, being very expensive, various other substances were investigated, Mr. Edison having been especially active in this direction, and tungstate of calcium has been found extremely well adapted for the purpose, becoming very luminous and being comparatively cheap. The fact that these rays were capable of affecting the ordinary photographic plate has led to most sudden and widespread interest in this extraordinary phenomenon, and much work has been done in turning these scientific truths to practical account. Skiagraphs are taken with the tube distant about eighteen inches from the patient, as a rule. In some instances the patient lies on the plate, which is covered only by a paper envelope, to preserve it from becoming fogged by the daylight. In other cases a fluorescent screen of paper covered with tungstate of calcium is placed next to the film, the object of the screen being to shorten the time of exposure; but I do not think that the pictures so taken are as clear in outline as those taken without the screen. Both of these methods of observing the interior of the body are of use to the surgeon and have their separate uses.[1]

[1] Since this address was written it has been suggested to the author by Dr. H. W. Frauenthal that a small fluoroscope fitted to one eye could be used in certain operations, enabling the operator to see with one eye the outer field of operation and with the other the relation of the deeper structures, after the manner of using the camera lucida in drawing microscopic fields. Practical experience with the method has shown it to be difficult to acquire the necessary dexterity of the ocular muscles, but it is believed to be a useful suggestion.

It was evident from the first that this new discovery opened a wide field in surgical diagnosis, and it has seemed to me that it might be of interest to you to dwell upon some of the conditions in which I have found it of benefit. You all have heard of the numerous instances in which needles have been located, which were otherwise inaccessible, and have heard of the case where an enormous number of bird shot were located in the hand, some in the bones, some in the soft parts, and successfully removed. Another extremely curious fact is that glass is much more opaque to the rays than are many metals, and, in consequence, that pieces of glass, which are often very hard to find when imbedded in human tissues, can be located with ease by this method.

The most obvious use to which this new discovery can be placed is in the location of uncertain fractures and in the differential diagnosis between fracture and dislocation in the neighborhood of a joint. After the fracture has been set and the dislocation reduced it is possible by means of the X-ray to determine whether the dislocation has been satisfactorily reduced, and if the broken fragments are in correct apposition; all this being accomplished while the injured member is in its plaster-of-Paris dressing, so that instead of waiting a number of weeks and removing the dressing to find that the fragments are incorrectly placed, this fact can be ascertained at once and the mistake remedied. In locating foreign bodies that have been swallowed the X-rays have rendered good service. The patient's sensations not always being a reliable guide as to the exact location, while the skiagraph tells us exactly where to operate.

In operations on congenital dislocation of the hip it is feasible, first of all, to take a skiagraph or shadow picture of the pelvis, showing the acetabulum and the displacement of the femur, and later on to take a similar picture showing whether or not we have been successful in replacing the head of the femur in the acetabulum.

In cases of old sequestra in the neighborhood of a joint, it is possible to locate these sequestra, and I believe that it is possible to locate in this manner abscesses occurring in bone, although I have not had a case on which this experiment could be tried.

The localization of foci of disease in the neighborhood of tubercular joints, before the joint itself has become involved, is a matter of much importance and may at times point out to the surgeon the mode by which such a focus may be successfully removed before the disease has invaded the joint.

Another point upon which it has bearing is the differential diagnosis between fibrous and bony ankylosis. In skiagraphs of the normal joint there is apparently a distinct interval between the ends of the bones comprising a joint, which is due to the fact that the cartilage covering the ends of the bones is so very much more translucent than the bone itself that it does not cast a shadow, whereas, in a joint where the cartilage has been absorbed and the bony surfaces themselves brought in contact, this apparent gap does not exist. In studying these pictures more can usually be seen on the negative than in the print, although this is not invariably the case, and a certain amount of practice is likewise necessary in order to permit one to correctly interpret what he sees. I remember being greatly deceived in the first picture which I saw of a child's ankle. I had not seen the child but was told it had been the subject or a rail-

road accident, and I at once imagined that the fissures which I saw in the skiagraph in the neighborhood of of the ankle-joint were either fractures or epiphysial separations, but on examining the picture of the other leg I found exactly the same gaps in the bone and at once saw that what I had taken for fractures were simply the epiphysial cartilages, which had not yet become ossified, on account of the youth of the subject, and in consequence failed to cast a shadow.

In children this same phenomenon is noticed in the acetabulum and about all joints, where the epiphysis appears as a small button of bone quite distinct from the shaft, and not touching the button of bone which forms the epiphysis composing the other side of the joint. If, however, the exposure be nicely timed the outline of the entire end of the bone can be made out, its shadow being much less dense than that of the ossified center. This same fact makes the skiagraphs of clubfeet of very little importance in children, because the bones are so largely cartilaginous that their relations to one another are rendered very indistinct and only the central parts can be discerned, large gaps apparenrly existing between all the bones of the foot.

It affords us, however, a very striking proof of a fact that all of us must realize as soon as our attention is called to it, that the feet of children are extremely cartilaginous, and that the bones are susceptible, in consequence, of very large alterations in shape, provided they are properly manipulated; and a practical deduction which may be drawn from this is the folly of removing such cartilaginous bones in young children, instead of submitting them to properly directed force, in order that their shape may be so modifed as to correct existing deformities. In cases of web-fingers and supernumerary toes, great use has been made of this discovery in planning operations, as the outward appearance of the hand does not always give a correct idea of the internal relations of the bones.

Calculi in the kidney, ureter or bladder can be detected by this means—the uric acid and oxalate of lime being most easily seen. Gallstones cast too faint a shadow to be found with certainty.

It seems to me that it may be possible, with a better practical understanding of the application of the principles in making these pictures, that good skiagraphs may be obtained of tumors and much light thrown upon abnormal conditions within the thorax and pelvis. I have, as yet, seen no good picture which confirms this view, but the more I have seen of the practical workings of X-ray photography the more I have realized the very delicate adjustment which is necessary to attain certain results.

It must not be supposed that all that is necessary to obtain practical results is the purchase of an induction coil, a battery and a few Crookes' tubes. Practical experience is needed to show the amount of current to be used, the rapidity of interruption, the proper length of a spark, the amount of exposure, and a great many tiresome failures will be necessary before good work can be achieved. The exposure which gives the best definition for bones is altogether too long to give definition for soft parts, and the operator must know in advance what he is trying to show in order to be able to regulate with exactness the conditions to produce a proper result. Again, it is necessary to familiarize yourself very thoroughly with the skiagraph under consideration, and each time that you study it new features will impress themselves on your mind. It often happens that when you return to an old skiagraph after an interval of a few days you will discover various points of interest in it which you failed to detect at the time of your previous examination. The shadows which are cast by various parts of the body are not very well known to us. It is a matter which has been investigated, very superficially, and it will require a large number of observations before we are able to put the proper interpretation upon the pictures that we see. We have to bear in mind that the nearer the plate is to the object which casts its shadow upon it the more clearly defined will be the outline. In many instances some parts of the body which are photographed are much more dense than others and the amount of exposure which is necessary to give the best results in certain places will be too long or too short to give the best results in others, and, in consequence, if we wish to examine the entire length of a bone, or the length of the spinal column, for instance, it may be necessary to take a series of plates, with different exposures, and to combine all of these in our search for information.

The time at my disposal is so short and the number of advances in surgery is so vast that it would be impossible to give a synopsis of them all. I have, therefore, dwelt in this most cursory manner on only a few of the most important advances made during the past year.

Glancing at these novel procedures we can not help being impressed with the fact that the lines along which surgery is developing show, even more clearly than heretofore, how far the surgeon of today is departing from the type of his early predecessors. The early surgeon, as his name denotes, worked with his hands, χείρ-ἔργον—the chirurgeon, the skilful, handy man—while the surgeon of today not only calls into play the dexterity of his fingers, but in addition thereto exercises his intelligence, his mastery of kindred sciences and puts into practical application the truths of physiology, physiologic chemistry and the results of bacteriologic research. The surgeon of today applies to the solution of the problems which confront him, the experience of the bacteriologist, the chemist, the physicist, and substitutes for empiric methods and for those which have been handed down from generation to generation and accepted as correct in a blind, unthinking way, newer and more scientific proceedings, based upon logical deductions from physical phenomena, and the application of abstract scientific truths to the living being. In the extremely interesting papers which will be brought before you in this meeting you will find this position amply justified.

Medicated Soaps, Savonal.—According to the *Nouveaux Remèdes*, July 24, it has been found that dermatoses are influenced more rapidly by medicated soaps than by salves and pastes, and Müller and Grube have succeeded in producing a soap base which is more stable and efficient than Unna's, etc., as there is no grease in excess. It is made by mixing cold olive-oil, potash lye and alcohol until complete saponification; the fat acids are precipitated with weak hydrochloric acid on glass, and the alkalin mother liquid added until the limpid liquid is perfectly neutralized, when it is evaporated to the consistency of a salve, light green in color, which they call savonal. It is liquefied by adding a certain per cent. of glycerin and aq. dest. and evaporating to a syrup (specific gravity, 1,050 to 1,055). Twenty-three medicated soaps made from it are given with their indications.

ORIGINAL ARTICLES.

MILITARY SURGERY IN TURKEY.

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The journey from Athens to Constantinople at this time does not reveal anything that would remind the traveler that a war raged so recently between the two countries. The olive trees, which are seen everywhere, are laden with their oily fruits, and the endless vineyards promise a rich harvest of luscious grapes. The patient donkey carries his burden to the market in slow measured steps as though nothing had disturbed so recently the financial prospects and calculations of his master. In the many fatherless houses the dusky black-eyed children sing and play merrily, ignorant of the violent political eruptions which so recently threatened their lives and homes. The great caravans of camels bringing grain, fruit, spices and oil from distant parts of Asia wind their way along the narrow, crooked streets of Smyrna unmindful of the presence of armed soldiers who are arriving daily from the late seat of war. The few birds that inhabit the rural districts chirp and sing the praises of their Creator with the same regularity and devotion as before the war cry between the two angry nations disturbed the atmosphere in which they breathe and move. The Turk who has returned from the scene of war is a different man from his less fortunate opponent. He is conscious of his victory and all that pertains to it. He holds his head high and in loud and emphatic language relates to admiring crowds the story of the war, the many hairbreadth escapes, the successive victories won, and in prophetic words paints the future glory and prosperity that await his country. The haughty victorious Turk has placed his foot upon the prostrate, trembling little Greece, demanding a war indemnity that they may eventually promise but which they never will be able to pay. The Sultan, intoxicated by the effects of an easily won victory, is defiant and counts himself among the leading rulers of the world. It is impossible to predict the ultimate outcome of the war. What now appears as a defeat for Greece may eventually reflect to her permanent advantage. This faint hope is cherished by all civilized nations and by every lover of art and science.

The average Turk is opposed to innovation and progress. In many respects he resembles the North American Indian. He takes no interest in history and tradition. To him the past is a blank and the future immaterial. His mind is engaged with the present. His inborn wishes and desires are in appropriating day after day, from his surroundings, everything within reach that will satisfy his flesh, leaving his soul to die of gradual starvation. He has no sense for beauty. Turkish architecture has gone into decay. Some of the magnificent mosques erected centuries ago are neglected and crumbling into dust. Science and art never had a foothold in this country, and there are no prospects under the present form of government that they will receive attention for centuries to come. The most auspicious national trait of the Turk is his laziness. Indolence is apparent everywhere. Even the numerous dog population of Constantinople has imbibed this national vice. The miserable half-starved brutes, half wolf and half dog, lie listless and motionless on the stone pavements all day, obstructing sidewalks and streets, and if perchance stepped upon have not sufficient energy to change their position or resent the intrusion in genuine dog fashion. Over all bony prominences the hair and often the skin is worn away at points where the almost lifeless carcass rests against the hard, rough bed of stone. During the night they muster up sufficient courage to prowl about for their scanty food supply and clear their dusty throats by violent efforts at barking. These hideous nightly concerts are the trial and terror of the traveler. The scavenger duty these dogs perform is but an inadequate recompense for the noise and disturbance they create during the night. They are the property of the community and eke out a miserable existence by gathering up the bones and crumbs which fall by the wayside. They are local tramps without a single legitimate function. The fanatic Turk would revenge a wilful injury to one of these beasts as quickly as if it had been inflicted upon a member of his family. The foot passengers and drivers are very careful to walk and drive around them for their own peace and safety as well as to prevent unpleasant street scenes. The dogs know that the Turks are their friends and behave themselves accordingly. The filthy streets and the whole aspect of the business world furnish additional evidences of the widespread indolence that prevails here. If it were not for the influx of immigration from countries where indolence does not exist to the same degree as an epidemic disease, the Turks would have died out long ago from starvation. Constantinople, with its nearly a million of inhabitants, is the most cosmopolitan city in the world. In its streets representatives of all nations can be seen. A free mixture of races for centuries has resulted in staining the skin various shades from an almost pure white to an ebony black color. Similarity of dress is unknown here. From the primitive dress of the original races inhabiting Asia and Africa to the most costly costumes of the Parisian tailor, there are innumerable grades. The red fez is the distinctive headdress of the Turk, whether civilian or soldier. The white and green turban distinguish the Mohammedans in mosque and street. The green turban is an evidence that its wearer is a direct descendant of the great prophet. The Turkish women are in reality married nuns. From the time they reach puberty they are shut out from the gaze of infidels by veil and screen. The windows of every house occupied by a Turk are permanently screened. The women are seldom seen in the streets and public places. In various ways the Turk secures their isolation from the outer world. They are to a certain extent prisoners in their own homes, slaves in more than one sense of the word. The inferior position occupied by women has had its decidedly baneful influence in degrading the male population. It is my opinion that greater freedom of the women would be the very best measure to rouse their sluggish husbands to greater activity and to awaken a keener sense of domestic and national responsibility. Let the women attend the little shops and put the men to work in the fields, workshops and streets, and Turkey would soon be able to pay her debts and become one of the most prosperous countries of Southern Europe.

The Turk as a soldier.—It is not generally known that the material for the Turkish army, with the exception of the medical office, is recruited exclusively from the Mohammedan portion of the population.

Every Turkish soldier is a believer in the Mohammedan faith. The military schools and barracks are closed to every Armenian and Greek. The Sultan has no faith in the patriotism of any of his subjects who differ with him in his religious views, and he places his own safe-keeping and the fate of his family exclusively in the hands of the Faithful. The Greeks, Armenians and other nationalities, who are citizens of Turkey but do not confess the faith of Islam, subject to military duty, pay a special tax of twenty piastres every year for the support of the army. The Turkish soldier as a rule is larger and stronger than the Greek soldier. The Greek is temperate in his habits of life as far as alcoholic drinks are concerned. The Turk is an almost complete abstainer. Coffee is his national drink. It would be difficult to find a habitual drunkard anywhere in the country. Masticho, a mild beer, and native wines are about the only alcoholic drinks used, and always with great moderation. The use of tobacco is limited largely to cigarettes and the water-pipe. The men are physically well developed and present the appearances of robust health. Among the officers many handsome men can be seen. The greatest diversity in uniform prevails. The cavalry horses are splendid animals. They are of medium size and high-spirited. The riding equipment is plain but practical. From what I have seen I am not astonished that the Greek feared the Turkish cavalry. The mounted force brought terror and consternation whenever it made an onslaught in earnest. The cavalry and artillery are armed with Winchester rifles, the infantry with Martini and Mauser guns. The Turkish soldier is brave when led by a competent commander and when he sees victory ahead. The faith in his religion takes away his fear of death. On the Turkish side the last war was noted for the quick mobilization of troops and well planned sudden attacks, a repetition of Moltke's methods of warfare. In observing the maneuvers of the troops the hand of German drill-masters can be seen everywhere. The organization of the Turkish army is closely patterned after the German army. The Turkish fleet is in a somewhat deplorable condition, far inferior to that of the Greek fleet. A naval war between Greece and Turkey would be a more equal contest than the late conflict on land. The privates and non-commissioned officers possess a common school education, as education is compulsory in the country. The officers receive a careful military education in the military schools at the expense of the government.

Boy soldiers.—During the late war a number of boys from 13 to 15 years of age, served as volunteers. In one of the military hospitals I was shown three of these little heroes who faced the Greeks on the battlefield. All of them received serious injuries but fortunately recovered. They were anemic and emaciated, but happy in the thought that they had contributed their share in saving their country from foreign invasion. One of the officers took great delight in praising the courage and endurance of these faithful patriots and made the remark that when they did move it was always in the direction of the enemy. Let us hope that the Sultan will recognize their services and that he will see to it that when they leave the hospital it will be with a decoration for heroic conduct, which they can show to their relatives and friends as precious mementoes of their patriotic deeds.

A TROOP OF TURKISH CAVALRY.

Red Cross societies.—The Red Cross Societies of Germany, Russia and Austria sent physicians, nurses and hospital supplies to the Turkish troops. The

German Red Cross Society was represented by three surgeons and twelve nurses. Russia sent four surgeons and Austria three. Most of the surgeons and nurses did duty in the regular military hospitals under the supervision of the medical staff. The Turkish troops were well supplied with native doctors and there was, therefore, little need of physicians from foreign countries. The English Red Cross sent financial aid. All of the nurses and doctors that remained in the city on my arrival left for their respective homes the next day. The appreciation of the Sultan, of the services rendered by the German branch of the Red Cross Society, was manifested by a gala dinner at the royal palace to the representatives of Germany and Austria the evening before their departure. A notice of this event appeared in one of the daily papers the next day. "The members of the Red Cross Missions sent by their Majesties, the Emperors of Germany and Austria, and who are about to return to their countries on the accomplishment of their task, were entertained at dinner at the Imperial Palace of Yildiz yesterday, Monday. Their excellencies, Mavroyeni Pasha, physician-in-chief of his Imperial Majesty, the Sultan; Munir Pasha, Grand Master of Ceremonies, and Dragoman of the Imperial Divan; and Marshal Shakir Pasha, Chief of the Imperial Military Household, were also present at the dinner. His Majesty was pleased to confer decorations upon his guests, who received them on taking leave after enjoying the Imperial hospitality." Although the Turk is not in sympathy with the work done by the Red Cross societies, he is beginning to appreciate the blessings which these societies bring to the sick and wounded soldiers in time of war irrespective of creed and nationality.

Red Crescent.—During the Crimean war an organization was effected in Turkey, the object of which was to bring aid and comfort to soldiers disabled for duty by sickness or injury. This movement was undoubtedly conceived and fostered by Florence Nightingale, who was then stationed here. After the war the Society remained in existence, but very little interest was taken in its work until after the founding of the Red Cross Association at Geneva during the great War of the Rebellion. The Turks, for obvious reasons, objected to the red cross as the insignia of neutrality of the new society, and adopted in its place the red crescent on a green field. The red crescent has never been popular in Turkey. Not a single member of the army has joined it. It is composed of a few prominent wealthy Turks but the bulk of the list of members is made up of foreigners. The non-combatant soldiers who serve as nurses and litter-bearers wear the red crescent on the left sleeve. The hospital flag bears the same insignia. Practically, the red crescent is equivalent to and is used as a substitute for the red cross in the Turkish Army. During the war just ended the Red Crescent expended 8,000 francs for the relief of the sick and wounded and fitted out a hospital ship which transported many of the wounded from the seat of war to Constantinople. No members of the Red Crescent attended the troops on the battle-field and in the field hospitals. A better organization of the Red Crescent Society is very desirable and should be encouraged and assisted by the Red Cross societies, particularly by those belonging to adjacent European countries.

TURKISH ARTILLERY.

Medical corps.—The Turkish troops are well supplied with medical officers, who are specially trained for military service. This branch of the military force is open to all nationalities, including the Greeks and Armenians. The medical officers are educated at the expense of the government. The University of Constantinople is attended by about two thousand

students, of which number five hundred belong to the Medical Department. The medical course extends over six years, when the candidates for graduation are examined by the Faculty. If the examination proves satisfactory the candidate is reported upon favorably to the Civil Medical Council, in whose hands alone rests the power to grant the degree or licence to practice. As the only university in Turkey is in Constantinople it is somewhat unusual and refreshing to know that the Medical Department contains such a small number of students. The medical student who chooses the military course must pursue his studies the same length of time. The department for medical officers is distinct and the final examination is conducted by a board of examiners composed of seven military surgeons. The president of this board is the Surgeon-General of the Army, who has the rank of a major-general. This board is called the Council of Hygiene and besides deciding upon the merits of the candidates for the medical corps, superintends and controls the work of the medical department of the army. The old custom of training barber-surgeons for the army is still in vogue in Turkey. This low grade of surgeons is composed of men with a limited preliminary education. The barber-surgeon is required to attend lectures and demonstrations for two years before he is permitted to come up for examination prior to his entering the army. His rank in the army is low, his pay scanty and his duties menial. He is allowed to cup, bleed and blister as in years gone by, but is always under the strictest supervision of the military surgeons. He is not allowed to dress a recent wound or prescribe. In a most humble capacity he assists the surgeons in their work. By extraordinary effort and perseverance occasionally such a surgeon is commissioned, when he leaves the barber's trade and is entitled to enter the medical service proper. Two of these surgeons are assigned to each regiment. The medical officers enter the service with the rank and pay of captain. The pay is small and promotion slow unless favored by strong political influences, which here as elsewhere, are the easiest stepping-stones to position and rank. The medical officer in the Turkish army is known by the Æsculapius staff in the center of the narrow shoulder-straps. The rank is indicated by stripes of gold braid on the lower end of the coat sleeve, the stripes running parallel with the sleeve. Officers of high rank are known by the number, color and direction of the stripes. The medical officer, when he enters the army, pledges himself to serve for twenty-six consecutive years, when he can retire with a pension. If, for any reason except disability, he leaves the service before the expiration of this time he is obliged to refund the government for his expenses incurred in obtaining his medical education. That advancement in the medical corps of the army does not always take place in the regular order was made very plain to me when I was introduced to the chief of staff of the Yildiz Military Hospital, who is a pasha with the rank of brigadier general, and is only 27 years old. I was informed later that this rapid advancement was at least in part due to his being the son-in-law of an influential politician who has great influence with the Sultan. It must have been somewhat discouraging to the many gray-haired captains and colonels who have served their country for more than twenty years, to see one so young promoted over their heads. Specialism in military practice is recognized by the Turkish Government. I met two military surgeons, with the rank of colonel, who for years have devoted their whole time and attention to ophthalmology. They attend large wards in the military hospitals set aside for this special kind of work. Both of these men appeared to be familiar with the great advances that have been made during the last twenty-five years in this branch of surgery. There are few men in Turkey who do anything like a large surgical practice. The *furor* of operations has not reached this part of the world. The ovaries and prostate gland are comparatively safe. The Turkish women are not as anxious to be operated upon as their American sisters. The proposal to castrate a Turk for enlargement of the prostate gland would mean personal danger to the would-be operator. The military surgeons are entirely conservative in their work. Unnecessary operating is universally condemned.

Dr. Marie Siebold, a graduate of a Swiss university, is the only female doctor in Turkey. Her sex prevents her from receiving a diploma from the Constantinople University. She has, however, obtained a license to practice her profession. She is an earnest student, a careful and able practitioner and, while not fully recognized by her male colleagues, she is certainly fully their equal. Dr. Siebold has seen military surgery, but during the last war took no active part.

Hospital corps.—The hospital corps is composed of 3,000 non-combatants specially trained for the transportation of the wounded and the care of the sick; litter bearers, detailed as emergency demands, and hospital stewards. The hospital stewards are graduates in pharmacy and are enlisted as such after having passed a satisfactory examination, The army is supplied with 8 ambulances and 200 litters. This equipment for the transportation of sick and wounded during the late war proved inadequate and the most of the wounded had to be carried from the battlefield to the field hospitals on mules, donkeys and rough carts. It is said that many cases of penetrating wounds of the abdomen were strapped on the back of donkeys and died before reaching the hospital. The dressing materials which I saw in the different military hospitals were either of French or German manufacture. Considering the many modern improvements which have been made in the arms and equipments of the Turkish army, it is to be regretted that so little money has been spent in bringing the hospital corps up to the high standard of the present requirements in field and hospital practice.

Military hospitals.—All of the field-hospitals were either buildings used for this purpose temporarily or hospital tents. The permanent military hospitals in Constantinople are large and commodious structures. Everyone is located on an eminence surrounded by ample grounds beautified by semi-tropical trees and flowers.

Yildiz Hospital.—This structure embraces twenty-two barracks and overlooks the palace of the present Sultan. Before the war a few old barracks furnished ample accommodation for the sick of the military force in that part of the city. When the war broke out new barracks were built, and in less than four weeks it furnished room and ample accommodations for 1,000 patients. This is the hospital to which most of the wounded were brought and in which most of the operations were performed. At the time of my visit it contained 900 patients, most of them surgical.

It is under the charge of Djemil Pasha, who is chief of the large medical staff. The surgeon-in-chief is only 27 years of age and is a graduate of Paris. He is a fine-looking man, a polished gentleman and is said to be the best military surgeon in Turkey. The oculist in this institution is Professor Behdjet, who, in the army has the rank of colonel. Colonel Behdjet has a large number of cases under his care and has made some very interesting observations on wounds of the eyeball and orbit. He has had under his personal observation twenty-two cases of traumatic destruction of the eye without a single case of sympathetic implication of the opposite organ, although in a number of cases enucleation was refused. In several cases shown the injured eyeball had been removed, the patients wearing a glass eye with most excellent cosmetic result. It is a somewhat singular circumstance that in all cases it was the right eye which was injured. One of the barracks is used exclusively for operative work. There are two operating rooms, one at each end of the building, one of which is used for aseptic the other for infected cases. Attached to each of the operating rooms is a small ward with four beds where the patients who have been operated on are taken care of until they have recovered from the immediate effects of the operation. The operating rooms are supplied with all the materials and instruments for aseptic work. Until recently two barracks were in charge of four German female nurses belonging to the German branch of the Red Cross Society. The patients are well fed. The day I visited the hospital the bill of fare for dinner included soup, rice, spaghetti, roast mutton and squash. The evening meal includes vegetables. The coffee and bread are better than in the average restaurant and hotel in the city. Wine is served only when prescribed by the attending surgeon.

Haidar Pasha Hospital.—This hospital is one of the oldest in the city. It was erected a few years before the Crimean war. It is located across the Bosphorus in Scutari, is an enormous structure with a capacity for 1,000 patients, and is surrounded by beautiful grounds extensively supplied with trees, shrubs and plants. This hospital has been made famous by the work of Florence Nightingale. It is here that during the Crimean war so many soldiers received her skilful and faithful services. I was somewhat astonished not to find a reminder of her unselfish humanitarian work. The Turks speak of her with great reverence and respect, and in many ways manifest their highest esteem for her, but have done nothing, as far as I could see, to commemorate her memory. The Turkish military hospitals are closed to the outside world. All foreigners have to obtain permission through the minister of war to visit them. The doors once open every possible courtesy is shown from the highest to the lowest officials. Coffee is invariably served at the conclusion of the visit. Soldiers, officers and visitors are expected to smoke cigarettes whenever they feel inclined to do so. As the doors and windows are always wide open this general practice does not vitiate the atmosphere. The Turkish soldier eyes the visitor with great interest and is always willing to subject himself for examination. He is especially pleased to exhibit the effects and marks of recent gunshot injuries. The Haidar Pasha Hospital is now occupied by a large number of convalescents, medical and eye cases; it contains but few cases of recent gunshot injuries. The ophthalmic department is in charge of Col. Dicran Bey Adjeinian; it now numbers 140 patients. Colonel Adjeinian is a graduate of Berlin and devotes his whole attention to diseases of the eye. He has had a large experience in the treatment of ectropium. During the last five years he has operated on forty-two cases by the use of Thiersch's grafts. The contracting scar is excised; the margin of the wound away from the free border of the eyelid is transfixed at two points with a needle armed with silk. The silk sutures are fastened upon the surface of the skin with collodium in such a way as to secure extension, thus widening the wound as far as possible. The raw surface is then covered under strictest antiseptic precautions, with one Thiersch graft. The graft is covered with a few layers of gauze wrung out of a 1 to 5000 corrosive sublimate solution, over which a thick compress of absorbent cotton is placed, the whole confined in place with an ordinary or gauze bandage. In applying the dressing, care is exercised to secure equable compression of the wound. The dressing remains for six days. He has operated by this method forty-two times with twenty-seven perfect, ten partial successes and five failures. He claims that in the cases which terminated favorably there was no tendency to relapse, and that the functional as well as the cosmetic results were excellent. The operating theater is well lighted and furnishes all the necessary equipments for aseptic work.

Formerly typhoid fever was common, but since the water supply has been changed it has almost disappeared. The drinking water is now brought in casks from the mountains. The nursing is done exclusively by male nurses.

Kumuch Sou Hospital.—This is the third large military hospital in Constantinople. It is used for medical and surgical cases. It has about the same number of beds as the Haidar Pasha. Each of these hospitals is in charge of a chief of staff, assisted by the requisite number of surgeons.

Killed and wounded of the late war.—It has been impossible for me to obtain reliable data relating to the strength of the Turkish army or the number engaged in the last war. From what I could ascertain the war footing of Turkey is in the neighborhood of 750,000, and of this number about 100,000 to 150,000 were sent to the front. At the present time Constantinople is full of soldiers. All of the barracks are crowded and nothing indicates that a large army still occupies Thessaly. Last Friday I had the pleasure of seeing the Sultan drive from his palace to the mosque, which he attends every week on the same day and at the same hour. This is always a gala day for the military. On this day at least 10,000 soldiers in full dress, representing the infantry, cavalry and navy, were drawn up to do honor to their chief and protect his person when outside of his prison palace. The officers and soldiers made a splendid appearance and the whole exercises passed off with a regularity and dispatch that would do credit to any country. The cavalry attracted special attention. The soldiers for this branch of the military service are selected with special care and the horses are the finest I have ever seen. The Greeks used large caliber guns and lead projectiles. The wounds on the Turkish side were all inflicted by large lead bullets. Although the Greeks were defeated, the victory seems to have cost many lives. The Turkish army lost 1,450 killed and 2,850 wounded; many of the latter died subsequently. The wounded were dressed on the field and were con-

veyed as quickly as possible by such means as could be secured to the field hospitals. A good many died here from the immediate and remote effects of their injuries. Those that could be transported were taken either by boat or railway to Constantinople, where ample room and accommodations were furnished by the regular military hospitals. I was given an opportunity to see and examine at least one thousand cases of gunshot injuries, most of them on the way to recovery. Infection was much more frequent on the Turkish than on the Greek side. A partial explanation for this difference is probably furnished by the size of the bullets in use and the difference in distance in conveying the wounded to the permanent hospitals. I took notes of a few cases of interest of which I will give brief accounts.

Case 1.—Secondary resection of shoulder joint. Bullet entered in front, passed through the head of the humerus and escaped behind. Resection of about three inches of the upper end of the bone was made, anterior and posterior incisions, and pieces of cloth removed from the wound. Infection. Fistulous opening remained in front; the posterior incision healed. Very little use of arm. Patient's general condition good.

Case 2.—Gunshot wound of knee joint. Bullet comminuted internal condyle of the femur and opened the joint. Extraction of bullet and atypical resection of joint in the field-hospital. Primary healing. Joint partially anchylosed, with leg in useful position.

Case 3.—Bullet wound of orbit. Bullet entered over the right superciliary ridge, passed backward, outward and downward, and escaped below and in front of external ear. Wound healed and patient is wearing an artificial eye with comfort.

Case 4.—Gunshot wound of knee joint. Bullet located by the use of the Roentgen ray. No suppuration. Incision of joint on both sides and removal of bullet. Primary healing of wounds. Motion of joint almost perfect.

Case 5.—Gunshot fracture of the spinous process at the junction of the dorsal with the lumbar vertebræ. Paraplegia complete immediately after receipt of injury. Paralysis remained until laminectomy at the seat of injury was performed. Operation followed by prompt improvement. Patient is now able to walk without the use of crutches. Depression of fractured vertebral arch was found to be the cause of the paralysis.

Case 6.—Typical resection of shoulder joint for comminuted gunshot fracture of head of humerus. Wounds of entrance and exit were enlarged, through which the fragments and projecting pieces of bone were removed. Wounds healed. Fair degree of motion.

Case 7.—Gunshot injury of shoulder joint. Bullet passed obliquely through joint. Anterior and posterior incisions made through which loose fragments were removed. Operation performed in field-hospital. Slight infection. Fistulous opening remains behind; anterior incision healed by primary intention. Use of arm very limited.

Case 8.—Gunshot wound of shoulder joint. Débridement in the field-hospital. Rapid healing of wounds of entrance and exit. Function of arm returning gradually.

Case 9.—Gunshot injury of axillary plexus. Bullet entered below the level of the shoulder joint and on the inside of the surgical neck of the humerus, and escaped behind, half way between the scapula and the dorsal spine. Complete paralysis. Patient complains of great pain, which he refers to the paralyzed limb and caused probably by a traumatic neuritis or neuroma. Secondary nerve suture is being considered.

Case 10.—Gunshot injury of elbow joint. Bullet passed obliquely through the joint, fracturing the internal condyle of the humerus. Primary atypical resection of joint. Infection. Fistulous opening remains behind the joint. The injured parts were exposed by a posterior bayonet-shaped incision. Active motion, none; passive motion, slight.

Case 11.—Gunshot injury of spine in lumbar region. Paralysis complete from the beginning. Bullet remains in the tissues. Wound healed. Cord has probably been crushed by the bullet or fragments of bone.

Case 12.—Resection of knee joint for gunshot injury. Great comminution of articular ends of femur and tibia. Primary resection. Healing of wound without suppuration. Consolidation not complete after two and a half months.

Case 13.—Secondary resection of knee joint for gunshot injury. Slight infection. Healing by granulation. Limb in good position. Bony union quite firm.

Case 14.—Gunshot injury of right crest of ilium. Partial resection for the purpose of removing bullet and loose fragments. Wound healed. Abdominal cavity not opened.

Case 15.—Loss of right eye caused by gunshot injury; loss of a portion of the orbital arch. Wound healed. Patient wearing artificial eye with comfort.

Case 16.—Retrobulbar gunshot wound of right eye. Bullet entered orbit, passed behind the eyeball and escaped in front of the external meatus on the same side. Traumatic optic neuritis destroyed the eyesight completely. Patient refuses enucleation. No sympathetic complications.

Case 17.—Loss of right eye from gunshot injury. Enucleation of stump. Complete healing of wound. Wears artificial eye without any inconvenience.

Case 18.—Gunshot wound of right groin. Bullet entered one inch above Poupart's ligament to the under side of the large blood vessels and escaped through the perineum on the same side. Intestinal fistula remains. Use of limb not much impaired.

Case 19.—Volunteer, 13 years old. Wound of right iliac region. Infection followed the injury and resulted in the formation of a large perityphlitic abscess, which was later opened and drained. Rapid recovery. Boy much emaciated and very anemic, but able to walk about the hospital grounds.

Case 20.—Volunteer, 14 years old. Gunshot wound of arm. Bullet passed from behind backward about an inch to the inside of the surgical neck of the humerus. Healing of wound by primary intention. Little or no impairment of function of the muscles of the arm.

Case 21.—Volunteer, 13 years old. Flesh wound of leg. Healing of wound under primary dressing.

Case 22.—Gunshot injury of skull. Primary operation. Removal of depressed fragments of bone. Wound healed leaving a pulsating cranial defect.

Case 23.—Secondary amputation of arm for gunshot wound. Stump healing by granulation.

Case 24.—Gunshot wound of superior maxilla. Partial secondary resection. Wound healing by granulation.

Case 25.—Partial resection of lower jaw for comminuted gunshot fracture. Considerable deformity.

Case 26.—Gunshot fracture of humerus. Great loss of bone caused by the injury and later by an operation for the removal of sequestra. Although periosteum was saved there is no callus at the end of two months, and a false joint without further interference will be inevitable. No nerve injury.

Case 27.—Gunshot wound of right groin. Abscess formation. Incision and drainage. Rapid improvement. Fistula remains. No intestinal complications.

Case 28.—Resection of shoulder joint. Wounds healed. Arm remains almost useless. Great muscular atrophy.

Case 29.—Gunshot injury of skull. Removal of fragments of bone. No focal symptom. Wound healed leaving a pulsating scar.

Case 30.—Loss of right eye from gunshot wound. Wound healed. Wearing artificial eye.

Case 31.—Gunshot wound of nose and hard palate. Bullet entered the center of the bridge of the nose and entered the mouth through the hard palate. Patient spit out the bullet from the mouth immediately upon the receipt of the injury. The perforation in the hard palate was closed by a plastic operation. External wound healed. Saddle nose.

Case 32.—Gunshot wound of face and lower jaw. Bullet entered over the ascending ramus of the lower jaw on the right side, entered the mouth, perforated the tongue and escaped through the mouth. A suppurating fistula communicating with the jaw remained. Recently this fistulous tract was laid open and a detached tooth was removed, after which the fistula closed rapidly and permanently.

Case 33.—Gunshot wound of ascending ramus of jaw on right side. Bullet chipped away part of the bone and lodged behind near the spine, from where it was successfully removed by a tedious and difficult operation. Movements of lower jaw limited, otherwise no functional disturbances.

Case 34.—Resection of elbow for gunshot injury. Secondary operation through posterior bayonet incision. Fistulous openings and considerable swelling of soft parts remain. Muscles of arm and forearm much atrophied.

Trephining for traumatic abscess of the brain.—Djemil Pasha, of the Yildiz Hospital, informed me that trephining for abscess of the brain following gunshot injuries with lodgement of the bullet in the cranial cavity, was performed three times. In all of the cases the indications for the operation were furnished by the intracranial suppuration. In all of the cases the abscess was found and the bullet removed. Two of the cases recovered and one died.

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THE NERVE ELEMENT IN SURGICAL PATHOLOGY.

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The interlacing of the nerves with the different structures of the body gives energy to every vital organ in health and aggravates their disorder in disease.

To understand the correlation of the nerves and capillaries with the internal viscera presupposes a knowledge of the relation of the cerebro-spinal nerves with the ganglionic and vasomotor nerves. The outgrowth of the operation of the excito-motor, the excito-secretory and the excito-dynamic functions of the nervous system upon the different structures in their physiologic condition, prepares the mind to appreciate the great effects of vitiated actions of the nerves under their pathologic derangement.

The organic changes in nerve tissues are pre-eminently characteristic of the direct involvement of the nerve element, and the development of neuromata in the course of the nerve trunks illustrates the part taken by the nervous system in surgical pathology.

Neuralgia, in all its protean forms, is not a mere functional derangement of the nerve centers, but depends in most cases upon local modifications resulting from inflammatory action in the neurolemma or parenchymatous structure of the affected nerve. It may also exist, in a spurious form, connected with compression of the trunk, or from cicatricial adhesions after operations. The impression that contraction of nerves may give rise to painful developments has led to nerve stretching as a remedial agent, but little advantage has attended this procedure, and the idea that nerve shortening is pathognomonic is thus negatived.

Facial neuralgia has been traced to the Gasserian ganglion, and successfully attacked in some cases by operative measures involving the temporal bone, or in other cases by ligation of the common carotid artery.

Rheumatic complications of a most painful form, involving various regions of the body, are dependent upon the nerve supply to the part; and the acute sensibility of such structures renders anodynes of the greatest importance in the treatment of such disorders of the different organs.

Inflammatory processes, wherever located, are accompanied with pain, from the entrance of the sensory branches of the nerves into the organs; and the means which are adopted for the relief of the inflammation must include the control of the neurotic disturbance by combating this pain.

It is a fair inference that all agencies for the mitigation of pain have a curative effect upon the structures involved in disease.

The reciprocal influence of body and mind, in the progress of most physical disorders, depends upon their connection through the nervous system.

The psychic characteristics of neurotic patients must be taken into account in the management of surgical disorders, just as in medical cases, and much depends on the mental state of one who has undergone a grave surgical operation. The enervating influence of depression of spirits on the nervous system should be obviated by pleasant surroundings in the after-treatment. While these manifestations of the nerve influence in surgical disorders indicate the relation of cause and effect, it is to another mode of action on the part of the nervous system that I wish to draw especial attention.

In my address as President of the Southern Surgical and Gynecological Association, in 1892, the following points were presented: Observation of the changes resulting from inflammatory processes should be accompanied by a study of those modifications impressed upon the tissues by impairment or undue activity of the nerve element which enters into their composition. That many operators fail to take the nervous system into account in their surgical pathology, shows a lack of due consideration of the surroundings of a patient. It may be that a skilful operator is not qualified for the highest attainment in surgery, from lack of proper precaution in proceeding with an operation, or subsequently.

The aim of the surgeon should be a due comprehension of abnormality in the structures of the part involved, and his end be to afford relief with the least possible injury to the organ or member which is the seat of disorder.

A proper recognition of the scope of surgery and medicine assigns to them respectively the organic and functional disorders of the system; when organic changes ensue, whether demanding the use of medication or a resort to operative measures, the case comes within the field of surgery.

With our deficient knowledge of the etiologic factor in that condition known as shock, I am inclined to the view that a continuous baleful influence is propagated to the nerve centers from the disintegration of the structures involved, and that this may be modified favorably by amputation with a clean incision through sound tissues above the point of injury, very soon after such violence to the parts. A proper appreciation of the participation of the ganglionic nervous system in shock, should impress the great urgency of arresting the morbific influence by removing the cause.

The motor and sensory branches of the cerebro-spinal system of nerves are so related to the ganglionic nerves that an impression is propagated from the former to the latter by every change resulting from violence. We are therefore prepared to expect surgical shock involving the organic nerve centers from any accident accompanied by great laceration and contusion of the soft parts, or comminuted fracture of bones of the lower extremities.

To a greater or less extent the injury inflicted on the superficial cutaneous nerve fibrils is extended to the internal organs by the correlation of the nerves and capillaries with the viscera, and any extensive impression over the surface, however slight, is attended by marked vital depression. A striking illustration of this fact is presented in the grave effect of slight superficial burns extending over a large surface, and the serious consequences of the stings of wasps or bees over any considerable part of the body, though each is insignificant in itself. The notable effects observed from cups, sinapisms and blisters upon the skin are likewise due to the sympathies established through this channel of the nerves.

A dynamic element which characterizes the mutual dependence of the superficial and deep-seated structures is apparent from the fact that, under some conditions of the organism, the irritant fails to manifest its influence on the tissues. The mustard or cantharides may be applied to the surface for the ordinary

period, under such a depressing modification of vitality, without producing any perceptible effect. Yet, when a change has been effected in the state of the organization, normal susceptibility is restored.

The natural sensibility returns to the skin and irritation, with the consequent inflammation, manifests itself in the parts where no effect was previously observed. A rigid investigation of the nerve element implicated in this condition is required by those who would fathom this lack of the excito-dynamic function of the nerves.

The developments growing out of the relation of certain portions of the brain to the distribution of nerves to different parts of the body, are calculated to impress the profession more than any of the other advances of surgery within the last decade. It is to Horsley especially that we are indebted for localizing the brain centers connected with the distribution of nerves, and this fact has enabled surgeons to fix upon the sites of tumors and abscesses in various fissures and in the substance of the brain, by tracing the abnormalities of the branches of the nerves back to their origin. While this knowledge has served to guide the surgeon in chronic cases, little progress has been made in acute cases attended with blood clot or with localized inflammation. It is stated, in the *Medical News*, that Oppenheim emphasizes the difficulty of differential diagnosis in traumatic brain abscesses, which may be confounded with traumatic meningitis, apoplexy, encephalitis, tumor, epilepsy, traumatic neurosis, etc.

One of the great practical questions of the day which concerns every surgeon, is the consideration of traumatic neurosis, and, notwithstanding the numerous papers written for its elucidation, the decision is still involved in great obscurity. Even in cases where there is no motive for deception on the part of a patient, there are such a variety of neurotic troubles growing out of physical injuries, that depend upon the psychic impressions of the subject, that it is difficult to determine anything from subjective symptoms. There is frequently a notable absence of definite objective symptoms, and often a strong influence for simulation, which afford obstacles to forming an opinion in a given case. In an article by Dr. A. L. Hall,[1] we learn that "a correct diagnosis is best obtained from a reliable account of the accident, the history of the previous state of the patient, the presence of surgical troubles, and the existence of a stable well defined organized symptom complex."

There is a nervous disturbance which is attributed to so many different causes and relieved by such diverse means of treatment as to leave a doubt whether it should be classed with the neuroses or considered as an inflammatory process. This is known as multiple neuritis. The symptoms, according to Gowers, are of three classes—motor weakness, sensory disturbance and inco-ordination. According to the predominance of one or another of these, we have a motor, a sensory, and an atactic form of the disease. In an article by Dr. Charles Lewis Allen, it is stated that neuropathic constitution and exposure undoubtedly predispose to an attack. It begins with tingling and numbness in the finger-tips and soles of the feet. Sooner or later this spreads up the limb, and is followed by pain and loss of power, the legs suffering earlier and more than the arms, and often exclusively. The pain is located along the nerves and in the muscles.[2]

The involvement of the nervous system in epilepsy, is of such a nature that its effects are to a large extent dependent upon a cumulative influence, which leads to periodic explosions. It is held by Hughlings Jackson, that the phenomena of epilepsy are all explained by a discharging lesion of the cells of the gray matter, and that the disease affects the motor centers and does not often have its primary seat in the medulla.

The nerve-cells are likened to so many Leyden jars which generate the electricity. Thus the explosion is due to a sudden diminution of resistance by which the pent-up nerve force is released, thus causing the epileptic phenomena. It so turned out that a similar solution of the intricate problem of the causation of this intermittent nervous disease was presented by me, before I knew anything of the theory of Hughlings Jackson, in a paper written in 1882, and read before the Medical Association of Georgia in 1884.

In illustration of my claim of originality I give the following quotation from my paper: The periodic and irregular exhibitions of nervous disturbance involves the most intricate etiologic conditions in the history of the pathology of this class of diseases.

Why the cause should be operative at one time and not manifested at another, is only capable of explanation on the basis of an accumulation of energy, which leads as it were, to an explosion, with a capacity of reproductions at certain intervals or at indefinite and irregular periods. The calm which is observed between the convulsions of epilepsy is not in any sense an absence of the disturbing cause, but an occasion for its gradual development until it shall have reached a force that breaks forth in the paroxysm, which is *sui generis*. The charge becoming completed, there is a forcible eruption of the excito-dynamic energy of the nerve centers.

Another phase of morbid development growing out of the transmission of local irritation or inflammation to other parts through the nerves, comes under the head of reflex disturbance. While the sympathies of certain local developments, especially those connected with the genitals of male and female children, with the distribution of the nerves to various organs of the body, are evident, the link of association is somewhat obscure. It is true that the practical results of surgical operations based upon this view have gone toward the confirmation of such a relation, and removal of the prepuce and clitoris, in the respective sexes, have proved successful in relieving the neurotic disturbances which are attributed to the local troubles.

The eruption of the teeth in children, and even wisdom teeth at a later period in life, are attended with neurotic disturbances of a marked character, which are promptly relieved, at times, by cutting through the gums.

These various manifestations of the intimate relations of the nerves with the different structures of the body open up the way for comprehending the role of nerve element in surgical pathology.

The development of traumatic neuritis is the most common complication of surgical cases; and there is rarely any extensive lesion which is not accompanied with more or less pain dependent upon inflammation of the nerve or its neurolemma. The irritation of the peripheral branch of a nerve may set up a train of disorders terminating in tetanus or lymphangitis, and

[1] Medical Record, p. 436, Sept. 26, 1896.
[2] Medical Record, p. 587, April 24, 1897.

the serious consequences of both these affections are well known.

In the latter condition, not only the lymphatic ducts become implicated but ganglions are involved in the inflammatory process, and suppuration is set up in the course of the lymphtics, with the characteristic features of pyemia, terminating in multiple abscesses in various portions of the body.

The subcutaneous use of simple distilled water has been resorted to with apparent effect upon the nervous system, and this proves a very delicate response of the nerves to the action of agents introduced hypodermically. The marked results of subcutaneous injections depend upon the connection of the nerve fibrils and the capillaries with the spinal and the ganglionic system of nerves.

The transmission of cutaneous modifications to the internal organs becomes, in numerous instances, simply the expression or delivery of a dynamic influence which operates through the nerves. Instead of a local irritation, as might be anticipated from the topical application, there is a general influence upon the organism corresponding to the special property of the agent employed, and we must attribute the effect to the conduction of medicinal powers from the point of introduction through the various channels of communication with the dependent structures.

To summarize the chief features of practical importance in the relations of the nervous system to other structures involved in surgery, we make the following deductions:

1. The cutaneous development of the minute branches of the cerebro-spinal system of nerves and the ganglionic ramifications of the great sympathetic, are so related to the capillaries, as to establish a reciprocal action and reaction between them and the great nerve centers.

2. The vaso-motor nerves are so intimately linked with the excito-motor, the excito-secretory and excito-dynamic system of nerves that impressions made through the superficial afferent nerves are conveyed to all the corporeal structures and tissues so as to produce their effects upon the different organs.

3. Reflex phenomena depend on a complex interchange of local pathologic conditions with the nervous ramifications to remote parts of the body.

4. The fountain head of energy for all the functions lies in the nerve centers; and by controlling emanations from this source of power, the vital forces will be propagated, with regularity and uniformity, to all the remote parts of the physical organization. On the contrary, a harmful influence disseminated from the nerve centers entails disease in the different organs.

5. The means to be adopted for averting injurious impressions on the nerve centers, and the measures to be used for the correction of their derangement, make up the whole prophylactic agency of hygiene, and include all the therapeutic appliances in the treatment of diseases, as well as the application of surgical measures.

6. Close observation of the various modifications of the nerve element on the physical organism should reveal its direct influence in surgical pathology, and lead the surgeon to the adoption of proper means of relief.

Odol.—Alcohol 97 grams, salol 2.5 grams, saccharum .004 gram, essence of peppermint 0.5 gram, and traces of essence of cloves and caraway.—*Nouv. Remèdes*, from *Pharm. Ztg.*, 1897, No. 43.

THE OPERATIVE TREATMENT IN OCCLUSION OF THE JAWS.

Presented to the Section on Surgery and Anatomy, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, June 1-4, 1897.

BY J. EWING MEARS, M.D.
PHILADELPHIA, PA.

At the meeting of the American Surgical Association June 1, 1883, I read a paper on this subject and endeavored to collect all the information which then existed with regard to the procedures which had been in use from the first, for the relief of a condition which may at least be described as one very distressing to the patient. Mr. Christopher Heath of London in the "Jacksonian Prize Essay" of 1867 recorded cases in which he had performed operations for the relief of jaw-closure, and in a chapter devoted to the subject collated the work of others up to that date. According to Mr. Heath's statements, English text-books on surgery were remarkably barren of any information on the subject. He alludes to a reference of Mr. Cooper in his Surgical Dictionary, to a case treated by Dr. Valentine Mott in 1831, in which an operation was performed for closure of an opening in the cheek caused by sloughing and accompanied by closure of the jaws. In the edition of Cooper's Dictionary issued in 1861, closure of the jaws is described as occurring "after sloughing of the cheeks and gums from profuse salivation, the cicatricial bands being so rigid as scarcely to allow of the separation of the teeth." By far the most complete account is given in the first edition of Gross' "Surgery." This eminent surgeon had a favorable opportunity for studying the affection during his residence at Louisville, Ky., where, in college and hospital clinics, he was enabled to acquire a large experience owing to the prevalence of this condition due to the administration of calomel in excessive doses in the south-western sections of the country.

The affection occurs in two forms—the spasmodic or temporary, and the chronic or permanent. The former usually occurs in connection with some condition which affects the motor filaments of the third division of the fifth nerve, causing spasmodic contraction of the elevator muscles of the lower jaw. Among the causes may be enumerated the delayed or difficult eruption of the third molar or wisdom tooth of the lower jaw, the development of tumors from the external surface of the ramus and body of the lower jaw, alveolar abscess in connection with the posterior teeth, necrosis of the jaws, suppurative tonsillitis, and I have observed the condition to follow operations on the lower jaw when performed in the molar region. It may be proper to include under the temporary form of jaw-closure the condition which occurs in connection with attacks of tetanus. This form differs from those described above by reason of the fact that the jaw-closure is one among other symptoms which are present.

The treatment of the temporary form of jaw-closure consists in the removal of the causes. When dependent upon the impeded eruption of the wisdom tooth, the mouth should be opened by levers, the patient being placed under the influence of an anesthetic, and the second molar tooth should be extracted so as to afford space for the third molar, or as the latter is not infrequently found to be an imperfectly developed tooth, the offending organ should be removed. Where tumors, necrosis and alveolar abscesses exist as causes,

the treatment is obvious. For the relief of trismus, which is so prominent a symptom of tetanus, remedies which are efficient in controlling the general condition will afford relief.

Permanet jaw-closure may be due to conditions which attach the alveolar processes of the jaws firmly together, or to those involving the temporo-maxillary articulation. Union of the processes of the jaws may be accomplished through the formation of cicatricial tissue or of an osseous band. The formation of the cicatricial tissue is due to inflammation attacking a portion or the entire buccal mucous membrane. In these cases the inflammation may be due to ordinary causes or, as was most frequently the case in former years, be created by the excessive use of calomel producing severe ptyalism, and, as a rule, it occured in children. As a result of its occurrence at an early period of life the growth of the lower jaw and the associated structures is very markedly interfered with. I have observed this condition in many of the cases which have come under my observation. The formation of the osseous band may depend upon injury to the parts or arthritic inflammation leading to a a deposit of plastic matter and the conversion of this substance into fibrous, cartilaginous or osseous tissue. This bridge of bone may extend from the lower to the upper jaw or from the lower jaw to the temporal bone.

Closure of the jaws due to anchylosis of the temporo-maxillary articulation may occur as a result of inflammation attacking the joint, or of injury leading subsequently to inflammation which results in the formation of fibrous or osseous deposits. Very frequently the inflammatory action which is responsible for the obliteration of the function of the joints is rheumatic in character, and the condition is found to exist largely in those who suffer from rheumatic affections. It may also occur as the result of inflammation due to blows or concussions. The most frequent cause, according to my observation in traumatic cases, is the occurrence of fracture involving the neck of the condyle and which has been unrecognized. Such condition shortly leads to closure of the jaws, and this finally becomes permanent.

The pathologic conditions which produce jaw-closure may exist on one or both sides, that is, it may be unilateral or bilateral. In cases of closure due to the presence of cicatricial tissue or osseous band the diagnosis may be readily made by inspection of the parts and the introduction of the finger into the buccal spaces. When the temporo-maxillary articulation is involved the diagnosis may be somewhat more difficult, by reason of the inability of the surgeon to decide whether the joint is at all affected, the closure being possibly due to a contracted or rigid condition of the levator muscles of the jaw, and also, when the affection is unilateral, to decide on which side the fault rests. As complete a history as possible should be obtained in every case and both inspection and palpation of the joints should be practiced. The index finger of one hand should be passed into the mouth and carried as fas as possible on the inner surface of the ramus of the jaw toward the joint, and the index finger of the other hand should be placed over the joint externally. The patient should then be requested to make an effort to move the jaw so as to ascertain whether any motion exists in the joint. This manipulation should be made on both sides in order to determine in which joint motion may exist. The history of the case, in the event of the occurrence of injury to the joint or fracture of the neck of the condyle, may give information as to the joint involved, but this can not always be depended on. Deviation of the lower jaw to the affected side may sometimes exist, especially when anchylosis has been preceded by some inflammation. In such cases this condition aids diagnosis.

Under the improved methods of treatment the prognosis of jaw-closure may be regarded as favorable. Even in the most inveterate cases, in which the entire buccal spaces on both sides have been obliterated by masses of nodular tissue, operative treatment promises relief.

The treatment of jaw-closure due to the formation of cicatricial tissue has claimed much attention and has taxed the skill and ingenuity of surgeons from the beginning. At first, efforts were directed simply to the division of the tissue and the use, subsequently, of levers varying in power, by which the jaws were separated. The rapid reformation of the nodular tissue, with augmented induration and contractile power, rendered this method futile. Excision of the mass was then practiced with the hope of securing normal membrane in place of the tissue removed. This plan was not successful and was followed by a suggestion, if not the practice, of excision and transplantation of mucous membrane or of integument into the denuded buccal space, taking the flap of integument from so distant a point as the arm. Failure attended these efforts, and in 1851 Professor Esmarch of Kiel read an essay before the congress at Göttingen on the "Treatment of Closure of the Jaws from Cicatrices," in which he advocated the formation of a false joint in front of the cicatricial mass by the excision of a segment of bone of such size as to prevent union of the divided end and the operation was performed by an external incision along the base of the jaw. Professor Rizzoli of Bologna, in 1857, operated for permanent contraction of the jaws by a simple division of the lower jaw in front of the cicatrix, using for that purpose powerful forceps applied within the mouth. In order to prevent union a piece of gutta-percha was inserted between the cut surfaces of the bone, which procedure, it is stated, was accomplished successfully. By these two methods of operation one half of the mouth could be opened slightly, and thus far the operation was regarded as successful. The manifest objections to these methods were: 1. The slight extent to which only a portion of the mouth could be opened. 2. The formation of a disfiguring cicatrix, especially objectionable in females, when the external incision is employed. 3. The fact that this method could not be employed when both buccal spaces were occupied by cicatricial tissue.

Having failed, as others before me had done, by the employment of the different methods in vogue, I was led, in a study of the character of the pathologic structure which existed and of its marked tendencies to union after section as well as its reproductive power, to the adoption of a method by which normal mucous membrane should form behind the cicatricial mass. It was evident that if such a line could be formed the pathologic tissue in front could be severed without fear of union occurring, and the divided portions could be kept separated and their nutrition modified. In performing the operation a long-handled, slightly curved needle armed with a strong aseptic twisted-silk ligature of sufficient length is introduced at the angle of the mouth on the inner surface and carried carefully into the space between the cicatricial

mass and the buccinator muscle and the point made to emerge at the position of the last molar tooth of the lower jaw—at which point the posterior border of the cicatricial tissue can usually be felt. The ligature is now seized with the toothed forceps, the needle withdrawn and the ends tied, the ligature lying loosely in the channel thus formed. As the intention is not to divide the mass by the ligature it is permitted to remain without traction, the formation of the canal lined by normal mucous membrane being facilitated by drawing the ligature backward and forward, and thus destroying any adhesions which may form. The introduction of a probe curved so as to

Fig. 1.—Closure due to cicatricial tissue. Operation by introduction of ligature and division of cicatricial tissue.

easily take the direction of the canal is also of service, and gives the surgeon information as to its condition. When the probe passes readily and smoothly and without provoking bleeding, it may be assumed that the canal is lined by normal mucous membrane.

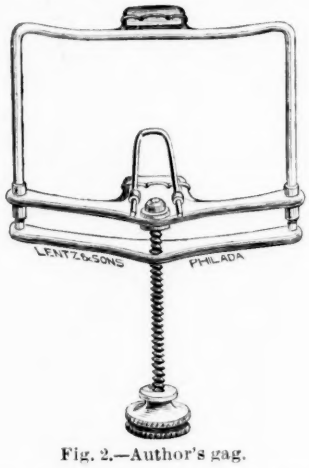

Fig. 2.—Author's gag.

When this condition is established beyond a doubt, in my experience usually at the end of three weeks, a grooved director curved in proper manner, is introduced into the canal and a blunt-pointed bistoury is carried along the groove dividing the tissue as it advances. This being accomplished a gag is placed between the teeth and the mouth forced open to its widest extent. The buccal space is then packed with 5 per cent. iodoform gauze, which is replaced the third day, the cavity being thoroughly cleansed with a disinfecting solution at each dressing. At the expiration of the second or third day the gag should be used, opening the mouth to its widest extent, and each day this should be practiced until there is evidence of the formation of normal membrane lining the buccal spaces, and the patient can without the aid of the gag open the mouth freely, the iodoform packing may be diminished as the reparative process advances. In some instances I have provided patients with a gag and advised its use from time to time, in order that the newly formed membrane may be kept pliable. In a few months, three to four, its use may be dispensed with. My experience with the method above described has demonstrated its value. It overcomes all the objections to the plan which involves the creation of a false joint in front of the cicatrix, and secures as perfect a result as possible.

As the result of jaw-closure which has occurred at

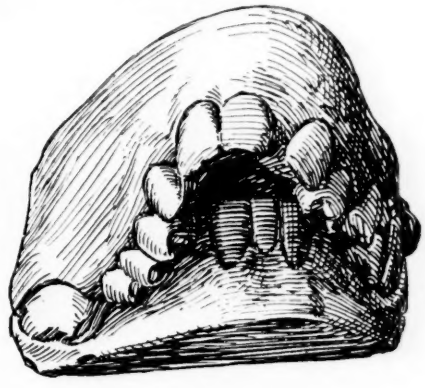

Fig. 3.—Impression of mouth before operation.

an early period of life; dentition is seriously interfered with. In some cases in which I have operated I have

Fig. 4.—Showing condition of non-development of lower jaw.

found the teeth projecting in all directions, crossing the oral cavity at various angles and forcing the tongue to rest on its edge. In such cases I take advantage of the anesthetic state of the patient at the time of operation to extract all of the teeth and roots which require removal, and thus prepare the alveolar borders for the adaptation of artificial dentures.

I referred above to the interference with the development and growth of the bones and soft structures of the face which sometimes occur in cases of jaw-closure. I exhibit a photograph of a case in which this condition occurred to a marked extent, the patient being at the time of operation 37 years of age, and

had suffered from jaw-closure in its severest form for a period of twenty-seven years.

The relief of jaw-closure due to the formation of an osseous bridge is easily accomplished by section of the bridge, a metacarpal saw being introduced and division effected from within outward. If the space between the teeth does not permit introduction of the saw into the oral cavity, section may be made from without inward from the buccal cavity. The disuse

Fig. 5.—One year after operation.

to which the temporo-maxillary joint has been subjected by reason of the closure frequently renders the joint rigid and motion painful; the use of the gag for a short time overcomes these conditions. More or less absorption of the divided bony bridge occurs after a time. If the mass is large it may be necessary, in order to overcome deformity, to remove the segments with the chisel or dental saw or burr.

Various methods of operative procedure have been resorted to for the relief of closure due to anchylosis of the temporo-maxillary articulation; these have differed from each other in the selection of the ramus or the condyle as the point at which an effort has been made to establish a false joint. Fibrous anchylosis

Figure 6.

can be removed by forcibly breaking the adhesions by movements as in the case of any joint.

To Dieffenbach is due the credit of having first practiced division of the ramus of the jaw, and by this operation creating a false joint for the relief of synostosis. Accompanying this method section of the masseter and temporal muscles has been performed. In 1863 Grube, as stated by Professor Gross, formed a false joint by dividing the neck of the bone with a straight chisel introduced through the mouth. Excision of the condyle by external incision in front of the ear, was practiced by Professor Gross in 1874 with excellent results in a case of complete synostosis of the lower jaw on the left side in a girl 7 years of age.

A review of the results obtained by these methods shows that neither accomplished all that was desirable. Section of the ramus was frequently inadequate and as frequently failed entirely by reason of reunion of the bone. Exsection of the condyle, while affording greater motion than section of the ramus, did not secure the establishment of as freely movable a joint as desirable, and moreover was performed by an external incision, which is always an objection by reason of the cicatrix formed on the face.

In order to secure a more freely movable false joint I have practiced excision of the upper half of the ramus, removing both coronoid and condyloid processes by an incision within the mouth. The operation is performed by introducing a tenotome

Fig. 7.—Closure due to formation of bridge of bone. Operation by section of bridge by Law. Four years after operation.

beneath the masseter muscle and forming a opening into which an Adams saw is passed, and dividing the ramus. The upper segment of bone is seized by the lion-jawed forceps and a probe-pointed bistoury is carried through the wound to the position of insertion of the temporal and external pterygoid muscles. The tendons of these muscles are severed and the segment twisted out of its position by the forceps. It may

Fig. 8.—Closure due to fracture of the neck of the condyle.

happen that the bone is broken in this effort and the coronoid portion alone removed. When this occurs the chisel is used to remove the remaining portion, including the condyle. In all events enough should be removed to insure ample space for the formation of a large joint, and also prevent, what is not likely to occur, reunion of the bone. The cavity formed is packed with 5 per cent. iodoform gauze for the purpose, not only of separating its surfaces and expanding it, but also for its service in controlling hemorrhage. The position of the inferior dental and the

internal maxillary arteries are to be borne in mind, and injury to them avoided. In the event of their being wounded the hemorrhage may be controlled by the gauze packing. Repacking of the cavity should be made on the third day, and then every

Fig. 9.—Operation by section of ramus and removal of upper segment of bone. Condition 2½ years after operation.

other day, the cavity being cleansed by the injection of a disinfecting solution. The mouth should be opened by the gag, which should be used daily for the purpose of overcoming the rigidity of the oppo-

Fig. 10.—Lateral deviation due to necrosis preceding operation.

site joint and of the muscles, occurring as the result of disuse. At the same time its use facilitates the formation of the false joint. Lateral displacement of the jaw does not follow this method as might prob-

Fig. 11.—Ten months after operation.

ably be expected, as may be seen in the photograph exhibited. In one case it is seen but it will be observed that the deviation existed before the operation and was caused by the inflammatory action which accompanied the necrosis from which the patient had suffered and which produced the anchylosis.

The conclusions which I present are:

1. Jaw-closure due to the presence of cicatricial tissue in the buccal spaces can be most efficiently relieved by the formation of a canal lined by normal membrane, by means of a ligature passed behind the cicatricial mass. Reunion of the divided tissue and reformation of the nodular tissue not occurring after division when this canal has been formed.

2. Synostosis of the temporomaxillary articulation, producing jaw-closure, can be best relieved by removal of both coronoid and condyloid processes with the upper portion of the ramus, thus affording ample space for the formation of a freely movable false joint. The operation should be performed through the mouth, thus avoiding disfiguring cicatrices.

DISCUSSION.

Dr. D. MacLean of Detroit—This is a very interesting paper on a specially important subject, particularly on account of its comparative rarity. My experience with these cases has been similar to that of Dr. Mears, and it is difficult to imagine anything more annoying to the patient than this affection. I remember this very well from a case I had some years ago, in which there was synostosis of the jaw occurring after scarlet fever. I believe statistics would show that the disease occurs more often after scarlet fever than after any other disease. In the case I refer to the patient could not move the jaw and I endeavored to relieve the condition by what I thought was an entirely original operation. I dissected off a part of the muscles of the jaw at the angle and resected a V-shaped incision on each side. I kept up passive motion for a long time until a complete false joint was formed on both sides, and I had the satisfaction of securing a useful joint. Dr. Mears has presented a larger view on the subject and I consider his paper a very practical and important one.

Dr. Lewis A. Sayre of New York—I would like to refer to an operation performed for this same condition by Dr. Schmidt of New York. My own son had a case of a similar nature, and by daily prying it open he got a useful joint. Schmidt was one of the first to operate this way, and he did so by dividing the masseter muscles.

Dr. I. N. Quinby of New Jersey—I know that passive motion will sometimes do a great deal, but occasionally a slight division of muscles is first important. We usually see these cases before bony ankylosis takes place and daily movements will enable you to succeed without any more severe operations.

Dr. Montague of Troy—I had a similar case some years ago in a girl 17 years of age, whose jaws were firmly locked and teeth had grown fast. I used wedges to open the jaws and secured a good result.

Dr. R. H. Sayre of New York—The case referred to by my father was one of those where there is some contraction of the soft parts. As Dr. Mears has said, each case must be dealt with on its merits, just as it would be in any other part of the body. Bony ankylosis must be treated on different lines, however, if it is due to cicatricial contraction. The child was in bad shape because the condition had gone on for six years without its parents noticing anything wrong. His playmates laughed at him and teased him and his parents then thought it was worth while to have something done. He ate through a very small hole where some of his teeth had been dislodged. The wedge I used was the one introduced by Dr. Meyer of New York, and consists of two parallel plates. By turning a screw the plates are separated. The plates are lined with lead so as to catch the teeth. A narrow edge was first inserted and later on, when the jaw was further wedged apart, the wedge could be used in another way, and the action of the screw could then be reversed so that wider separation is secured.

Dr. Mears—All of my cases came to me after attempts had been made by other methods, and some of them had suffered for many years, but in every case the result has been permanent.

VAGINAL HYSTERECTOMY, A REVIEW OF SIXTY-SIX CONSECUTIVE CASES.

BY CHARLES GILBERT DAVIS, M.D.
CHICAGO.

Whatever adds to the health of woman tends directly to increase the happiness of the human race. On her physical condition hangs the destiny of nations. The truthfulness of this assertion is instinctively recognized by the medical world. Hence, volumes have been written, and a controversial warfare has been waged for centuries in an endeavor to elucidate her diseases and relieve her suffering. So bitter have been these conflicts in regard to the pathology of her ailments and their treatment, that the pelvic cavity may well be called the battle-ground of medical science.

Every generation, every decade, sees new triumphs in the direction of truth. The last quarter of a century has witnessed a revolution in the surgery relating to the pelvic region. While general surgical methods have made a very decided advance, it must be conceded that some of the greatest triumphs have been achieved by improved operative measures employed to relieve many of the various pathologic conditions of the uterus and the adnexa. In the ablation of the uterus, ovaries and tubes much controversy has existed and still continues as to whether the abdominal or vaginal route afford the best results for equal conditions. The discussion, pro and con, has been extensive for the last three years and has augmented to the extent of many volumes. As with all subjects of like nature, there are a few salient points upon which the question hinges. My own observations are made after having witnessed these operations performed by some of the most skilled gynecologists of

FIGURE 1.—BEGINNING OF FIRST STAGE.

Europe, and then verifying their methods by personal experience. I am satisfied that each of these methods has its sphere of usefulness, and the broad-minded, unprejudiced surgeon will not be slow in making the application. The general of an army who relies at all times and under all circumstances on a single plan of battle, will ultimately meet a most inglorious defeat. The successful man knows that frequently, on the instant, it becomes necessary for him to change his method of operation. Taking all things into consideration, I am satisfied that for most pelvic operations the vaginal route offers by far the best results. With the statistics that we now have, I should regard it as unsurgical and unwise in the extreme to perform any operation on the pelvic viscera abdominally, when the ovaries we leave behind the real center of disease as the nidus or hatching place of diseased germs, which are liable to prove disastrous in the future. In my opinion, much nonsensical argument has been wasted on this subject. The uterus is simply serviceable in the process of child-bearing. After the ovarian ablation, its usefulness as an organ terminates and it becomes a superfluous and foreign body. I have no sympathy for the sentimentality that weeps over the removal of a permanently diseased uterus. It is far better to make these operations thorough, speedy and complete, than to remove a portion and leave the remainder to cause years of suffering or perhaps necessitate the ordeal of another operation.

I have never removed a uterus for which I felt

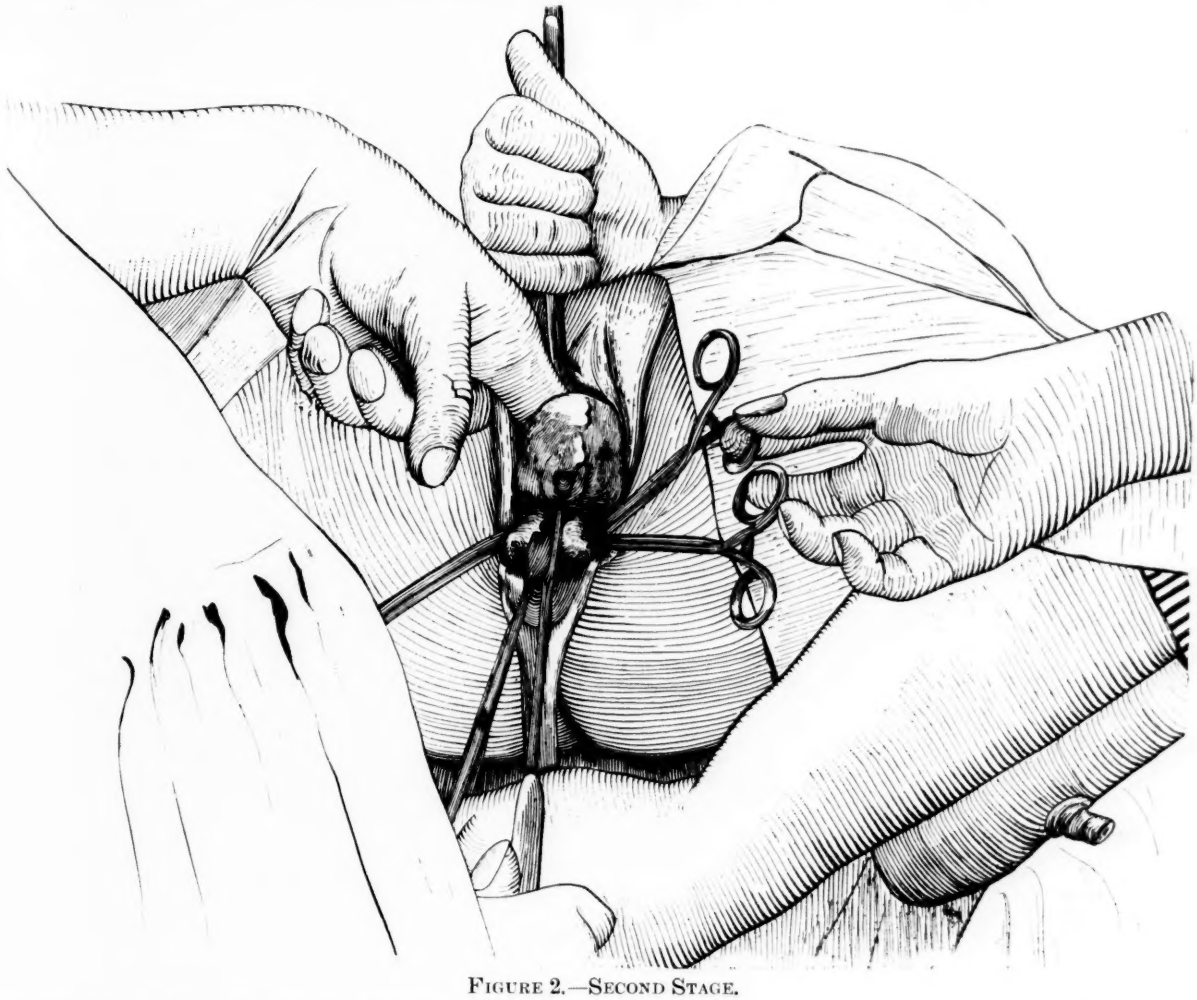

FIGURE 2.—SECOND STAGE.

there are no logical reasons or indications why the same could not be done by the vaginal method. There are growths, solid and cystic, of the tubes, ovaries and uterus, which we find impossible to remove *per vaginam*, but even here, in many instances, when the uterus has to be removed, I believe the percentage of deaths will be less if we begin or finish the operation through the vagina.

The question as to the advisability of allowing the uterus to remain when it becomes necessary to remove both ovaries, seems to me to have but little argument in its favor. We know full well that in a majority of instances the inflamed conditions that lead to the necessity of most of these operations have their incipiency in the lining membrane and other tissues of the uterus. If then we stop at the removal of regret. I have allowed several to remain that I am sure ought to have been removed. I have never known vaginal hysterectomy to be followed by hernia. The vaginal vault seems as strong or stronger than when occupied by the weighty and diseased organ. The sexual function in the mature woman is certainly not immediately diminished. I know of several instances where the removal of the diseased organ has caused an augmentation of the sexual sensibility. As a rule it is therefore safe to say, when we have to remove the ovaries, remove also the uterus, and do it *per vaginam*. The operation may be divided into three stages: 1, The cervix is encircled by an incision and the entire organ is denuded anteriorly and posteriorly, as far as practicable; 2, the uterine arteries are clamped and the uterus is enucleated, or if that is impractical, it is

removed by morcellation; 3, the ovarian arteries are secured and the uterus together with tubes and ovaries is cut away. The technique of the operation I have described in my article in the JOURNAL of Feb. 8, 1896, where I reported the first twenty-two cases of this series. After observing the German method of operating with ligatures and then witnessing the operation with clamps by Péan, I have not hesitated to adopt the latter method and have never deviated from it.

In my sixty-six cases I have never had occasion to tie a single ligature. Only once has hemorrhage followed the removal of the clamps at the expiration of forty-eight hours. This was from the right uterine artery, and was easily clasped by a clamp which was allowed to remain on forty-eight hours longer. In another case hemorrhage occurred during a dressing on the eighth day, caused probably by too great distension of the vagina with speculum by the nurse. It was not severe and yielded to hot douches. In another case an intestinal fistula manifested itself on the ninth day. This continued for about six weeks and then healed spontaneously. I am satisfied that many accidents of hernia, fistula, secondary hemorrhage, etc., are caused by unnecessary distension of the vaginal walls with dressings. Now, after the removal of the clamps, I never allow a speculum to be inserted until the wound is entirely healed. The cavity is douched once daily, taking care not to allow the fluid to enter the abdominal cavity, and the mouth of the vagina is distended lightly with two fingers and the parts dusted with powdered iodoform, and a small strip of gauze inserted to the depth of two inches. The external genitalia are again dusted with the powdered iodoform and a strip of gauze folded over the parts. A T bandage is adjusted and the dressing is complete. An early evacuation of the bowels expedites the progress of the case. This is usually done by an enema the day following the removal of the forceps. Menstrual storms are certainly modified by an early and prolonged administration of ovarian extract. The patient usually makes rapid recovery. There certainly is no other capital operation known for women to which we may so conscientiously and truthfully after our treatment apply the term "cure." There is not a

FIGURE 3.—OPERATION COMPLETE.

day or a week that by letter or conversation I do not hear expressions of gratitude for complete relief from suffering following the operation.

How often we all have been chagrined and disappointed by the opposite expressions that so frequently come to us after having done our best to relieve the patient by removing a tube, an ovary, or both, through the abdominal route. In many of these cases the removal of diseased structures was not complete and disease still lingered. If I should formulate the rules indicating the operation of vaginal hysterectomy, they would be somewhat as follows:

1. In all cases of malignant uterus where the disease has not advanced too far in the pelvic walls.
2. In maturely developed women where we determine to remove both ovaries or tubes.
3. In removal of one ovary when also the uterus shows evidence of long standing inflammatory action.
4. In all cases nearing the menopause suffering from chronic painful displacement.
5. In all cases of fibroid not to exceed the size of a child's head and involving seriouly the integrity of the uterine walls.
6. In double pyosalpinx and in single if uterus is badly diseased.

FIGURE 4.—DRESSINGS.

7. Whenever from any cause, specific or otherwise, the uterus has been chronically diseased, has long resisted other treatment and proved a center of serious reflex symptoms.

It is not infrequently the case that we begin a vaginal hysterectomy and, owing to adhesions or other causes, are compelled to abandon this method and

finish the operation through the abdomen. But it is certainly not detrimental to have made this beginning. In fact, whenever we perform abdominal hysterectomy the most rational procedure is to begin or terminate the operation by clamping the uterine arteries and removing the cervix through the vagina. Twice I have attempted the vaginal operation and been compelled to open the abdomen. In one case the entire came so profuse that I was compelled to finish through the abdomen. I only had to ligate the ovarian arteries, dissect the anterior and posterior flaps and then close the opening into the vagina with catgut sutures. The clamps remained, as usual, forty-eight hours. Neither of these cases is numbered in this series of vaginal hysterectomies. Both recovered. In these sixty-six cases there was but one death.

Number.	Name.	Pathologic Condition.	Hospital.	Ether.	Ether and Suggestion.	Result. Recovered.	Result. Died.	Subsequent history.
1	Mrs. E. E.	Fibroid	Chicago Baptist		1	1		Recovery Complete.
2	Mrs. T. D.	Fibroid	Chicago Baptist		1	1		Pelvic symptoms disappeared; suffered heart disease.
3	Mrs. J. S.	Fibroid	Chicago Baptist		1	1		Recovery complete.
4	Mrs. W. K.	Metritis, chronic	Chicago Baptist		1	1		Recovery complete.
5	Mrs. F. J.	Cystic ovaries	St. Mary's Polish	1		1		Hemorrhage at end 2d week. Recovery complete.
6	Mrs. A. F. M.	Fibroid	Chicago Baptist		1	1		Recovery complete.
7	Mrs. C. L. M.	Fibroid with cystic ovaries	Chicago Baptist		1	1		Recovery complete.
8	Mrs. C. H.	Fibroid	Chicago Baptist		1	1		Recovery complete.
9	Mrs. W. M. N.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
10	Mrs. E. W. C.	Salpingitis with metritis	Chicago Baptist		1	1		Recovery complete.
11	Mrs. B. L.	salpingitis	Chicago Baptist		1	1		Recovery complete.
12	Mrs. E. A. S.	Ovaritis, chronic	Chicago Baptist		1	1		Recovery complete.
13	Mrs. J. O. P.	Carcinoma	Chicago Baptist		1	1		No return of disease. Health perfect.
14	Miss M. S.	Cystic ovaries	Chicago Baptist		1	1		Health improved, but still nervous.
15	Mrs W. N. M.	Salpingitis	Chicago Baptist		1	1		Recovery complete.
16	Miss L. P.	Metritis and salpingitis	Chicago Baptist		1	1		Pelvic symptoms relieved; nervous.
17	Mrs. M. L.	Carcinoma	St. Mary's Polish	1		1		Recovery complete.
18	Miss D. M. K.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
19	Mrs. J. L.	Cystic ovaries	St. Mary's Polish	1		1		Hemorrhage on removal clamps, 48 hours. Parotiditis. Recovery complete.
20	Miss M. B.	Pyosalpinx	Chicago Baptist		1	1		Recovery complete.
21	Mrs. M. M. G.	Metritis, chronic	Chicago Baptist		1	1		Recovery complete.
22	Miss M.	Fibroid	St. Joseph's	1			1	Vomiting. Death from exhaustion 36 hours.
23	Miss L. H.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
24	Miss L. H.	Fibroid	Chicago Baptist		1	1		Recovery complete.
25	Miss C. P.	Metritis and large cyst of right ovary.	Chicago Baptist		1	1		Recovery complete.
26	Mrs. F. C. C.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
27	Mrs. C. G.	Carcinoma	Chicago Baptist		1	1		Recovery complete apparently.
28	Miss L. M.	Fibroid	Chicago Baptist		1	1		Recovery complete.
29	Mrs. W.	Fibroid	Chicago Baptist		1	1		Recovery complete.
30	Mrs. J. V.	Metritis, chronic	Chicago Baptist		1	1		Recovery complete.
31	Mrs. M.	Fibroid and large cyst of right ovary.	Chicago Baptist		1	1		Recovery complete.
32	Mrs. S.	Fibroid	Chicago Baptist		1	1		Recovery complete.
33	Miss W.	Fibroid	Chicago Baptist		1	1		Recovery complete.
34	Mrs. J. L.	Fibroid	Chicago Baptist		1	1		Recovery complete.
35	Mrs. S. K.	Pyosalpinx	Chicago Baptist		1	1		Recovery complete.
36	Mrs. J. B.	Fibroid	Chicago Baptist		1	1		Recovery complete.
37	Mrs. F.	Prolapsus of twenty years	Waunita, Colo.	1		1		Recovery complete.
38	Mrs. G. N. F.	Metritis, chronic	Chicago Baptist		1	1		Recovery complete.
39	Polish woman	Cystic ovaries	St. Mary's Polish	1		1		Recovery complete.
40	Mrs. L.	Cystic ovaries, large cyst right ovary.	Chicago Baptist		1	1		Recovered slowly. Fistula discharge; fistula tract, 2d operation, removed small section fallopean tube.
41	Miss G. W.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
42	Miss E. S.	Large cysts of both ovaries	Chicago Baptist		1	1		Recovery complete.
43	Mrs. M.	Metritis, chronic	Chicago Baptist		1	1		Recovery complete.
44	Miss L. D.	Metritis, chronic	Chicago Baptist		1	1		Recovery complete. Still nervous; pelvic symptoms entirely relieved.
45	Miss E. P.	Metritis, cystic ovaries	Chicago Baptist		1	1		Recovery complete.
46	Miss F. F. B.	Fibroid	Chicago Baptist		1	1		Recovery complete.
47	Miss M. B.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
48	Mrs. E. C.	Fibroid	Chicago Baptist		1	1		Recovery complete.
49	Mrs. M. R. S.	Metritis, chronic	Chicago Baptist		1	1		Recovery complete.
50	Mrs. P. M.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
51	Mrs. C. D. F.	Metritis, chronic	Chicago Baptist		1	1		Recovery complete.
52	Mrs. L.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
53	Mrs. C. G.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
54	Mrs. G. L.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
55	Mrs. A. M. H.	Fibroid	Chicago Baptist		1	1		Recovery complete.
56	Mrs. S.	Fibroid and cyst of right ovary.	Chicago Baptist		1	1		Recovery complete.
57	Mrs C.	Fibroid	Chicago Baptist		1	1		Recovery complete.
58	Mrs. J. F.	Fibroid	Chicago Baptist		1	1		Recovery complete.
59	Mrs. S.	Salpingitis	Chicago Baptist		1	1		Recovery complete.
60	Mrs. J. S.	Metritis, chronic	Chicago Baptist		1	1		Recovery complete.
61	Mrs. V.	Cystic ovaries	Chicago Baptist		1	1		Recovery complete.
62	Mrs. W.	Multiple fibroma of uterus, dermoid cyst left ovary and broad ligament.	Chicago Baptist		1	1		Recovery complete.
63	Miss M. C. L.	Fibroid tumor	Chicago Baptist		1	1		Recovery complete.
64	Mrs. L.	Large hydrosalpinx right side, cystic ovaries and chronic metritis	Chicago Baptist		1	1		Recovery complete.
65	Miss S.	Anteflexion, fibroid degeneration of fundus of uterus, cystic right ovary.	Chicago Baptist		1	1		Recovery complete.
66	Mrs. A. J. M.	chronic metritis	Chicago Baptist		1			Recovery complete.

pelvic viscera were cemented in a mass of chronic inflammation. I removed a greater portion of the mass with the uterus *per vaginam* and ruptured the bladder, which I subsequently closed by producing occlusion of the vagina. Again, I attempted to remove a myoma the size of a child's head through the vagina. I took away by morcellation the cervix and greater portion of the body of the uterus and clamped the uterine arteries, but the hemorrhage from above be-

No alcohol was allowed to any of these patients either before, during or following the operations. My experience during the last twenty years, both with and without alcohol, leads me to believe that when other anesthetics are available surgical cases do far better without its administration. It will be noticed from the table that hypnotic suggestion was used in most of these cases as an aid to the anesthesia of chloroform and ether. I regard suggestion as one of the

most powerful fortifiers of the nervous system, and I strongly believe there is no one single thing more calculated to insure the successful termination of a surgical operation than the employment of suggestion as the patient passes into the sleep of anesthesia. It is interesting to note that in the case of the one death occurring in this series, and the other cases of post-operative accident no suggestion was employed. Every surgeon should be thoroughly impressed with the fact that faith, hope, expectancy and belief, when aroused by suggestion, are most powerful aids to insure his patient against collapse and death. With this clearly before him and a determination to observe every minutia and care, he is in the best possible way to operate successfully.

240 Wabash Avenue.

EYE INJURIES PRODUCED BY BLOWS WITHOUT PENETRATION OF OCULAR TISSUES.

BY ALBERT B. HALE, M.D.
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I have just been favored with the usual medical triplet of similar cases, this time all being due to our Fourth of July celebration. Our lack of civic control in such matters suggests the necessity of a more direct education of the people in regard to the danger of slow explosives as commonly found in the so-called giant firecracker, for it will be a pity to wait till every family has had personal experience in the matter, before we conclude that promiscuous noise is a necessary token of exuberant patriotism.

My three cases all involved the right eye, two were due to firecrackers thrown from the hand of another person, and while two will end in greatly restricted usefulness, one eye has completely lost its function and may probably have to come out, within the not distant future.

M. H., male, 27 years old, tailor by trade, was sitting quietly at a table in a saloon near an open window, on the evening of July 4, when some public spirited boy threw a large firecracker through the window and on the table. The cracker exploded and the man jumped, put his hand to his eye and exclaimed that he had been hit! The neighbors kindly bathed and bandaged the injury for him, and the next day I was consulted. The powder must have ignited close to his face, for the picture was that of a typical burn of the third degree, where the ocular conjunctiva, *including the epithelial layer on the cornea*, was completely charred. There was some chemosis though no real secretion, but the wound looked as if a cautery (as I have seen its effects when used to destroy lupus of the lid) had passed thoroughly over the surface. The cornea was a remarkable sight; it transparency was lessened, though the iris could still be detected through it, but instead of being a regular, smooth, reflecting surface, it was now rough, covered with most minute protuberances, and looked to me like closely shorn velvet, or something like the cover-glass that has just been pulled from its bed of old Canada balsam. There was not much pain, and a minimum of vision remained. By energetic application of vaselin (cocainized and atropinized), ice, and afterward heat, and by constant watching and continued movement, anything like adhesion between lid and eyeball was prevented, although I ascribe this success rather more to the intactness of the palpebral conjunctiva than to any great influence of treatment. The cornea however, was lost—not that any ulcer formed, but the gradual restoration of epithelium was accompanied by the growth of the most absolutely leucomatous tissue I ever saw, the whole cornea being involved, so that it looked as if a circular piece of very white tissue-paper had by some marvelous means been nicely pasted over the iritic area.

Nothing could be seen through it, either by the doctor or by the patient, and while I have no means of knowing whether or not the other tissues were intact, I judge they were, because soon after the injury vision had to some extent been preserved, while there had been no subsequent symptoms of inflammation. I wanted to tattoo the scar, but the patient failed to keep his appointment, and soon after passed out of my control.

The second case was that of a little girl of seven who, while playing with her neighbors, allowed her curiosity to conquer her caution and was, therefore, too close to a giant firecracker when it was dismissed from the hand of its owner. Here there was a slight laceration of the cheek just below the outer canthus, a decided bruise of the tissue around the orbit and a severe concussion of the whole eyeball. The cornea escaped, but the iris was thoroughly lacerated and the lens substance disturbed, while the hyphema was at first so severe that an exact diagnosis could not be made. When the blood had finally become absorbed, the lens (anterior segment at least) was found to be completely opaque, the iris had been detached at several places from its ciliary insertion, and downward and outward a long thick adhesion was firmly established between iris and capsule exactly in the center of the pupil, so that but a small area of pupil was left above, the remainder of the aperture being occupied by a mass of iris and exudate. Nothing could overcome this adhesion, and with the progress of the cataract vision was gradually reduced to nothing, although light perception was well retained. This patient will soon be operated on, but of course the eye will always be unlike the sound eye and I dare not now promise the restoration of thoroughly good sight.

The third case was that of a boy 13 years old, who let a giant firecracker explode in his fingers while blowing the fuse to see whether it was alight. Here, also, there was no laceration, but intense swelling and some ecchymosis, with severe hemorrhage into the anterior chamber. After the swelling had subsided the iris was found to be torn from its ciliary attachment, there was a large fibrinous band stretching across the aperture caused by the rupture, the pupillary edge of the iris was inseparable from the anterior capsule, while at this spot (nowhere else in the anterior capsule) and to the whole extent of the posterior capsule there is a cataractous formation, which will soon become total, reducing the vision to the barest counting of fingers at one or two feet. Here there must be one operation at least, perhaps several, and though I have great hope of restoring vision by making this an aphakic eye, yet it will always be unlike its fellow and the boy has probably lost some of his commercial usefulness.

The lesson from all this is so obvious that I must restrain my reportorial ardor to sermonize from either a social or scientific point of view. Traumatisms cause about 10 per cent. of blindness in Germany and 8 per cent. in France, but such accidents may be for-

given as due to industrial occupations. Certainly such misfortunes as these can not be classed as industrial and we ought, therefore, to enter in our list of causes of blindness in America, "the Fourth of July."

INTER-COMPLICATIONS OF NEURASTHENIA.

BY JAMES G. KIERNAN, M.D.

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CHICAGO.

Neurasthenia is an old term applied to a long recognized condition whose relations however have only been cleared of obscurity of late years. The older clinicians described it under the term "nervous adynamia," a peculiar condition of the entire organism most obviously improved and benefited by tonics. The nervous system is the first part visibly affected, the heart the second; the contractile heart fails not from want of blood as in anemia, but more directly as from a shock or some toxic influence. The capillary activity seems impaired, the metabolism and nutrition thereby declined, the contractile power of the heart and blood pressure being much diminished. This condition, which is essentially one of exhaustion, finally fixes itself, whatever be the primary cause, on the central nervous system and finds expression in a nervous instability taking the line of least resistance. It has been claimed that the condition is essentially one of auto-intoxication. It is true that such a condition exists in neurasthenia and is an expression at once of excessive fatigue and its results on the nerve-centers. As Cowles[1] has shown, neurasthenia or pathologic fatigue presents itself in two aspects: 1. In normal fatigue with the discharge of energy the toxic products of exercise are always formed in nervous and muscle tissues. From this and other sources toxic elements may accumulate in the blood and tissues; in pathologic fatigue these contribute to a local or general inanition and auto-intoxication. Visible changes in nerve-cells attending normal fatigue go to support the inference of a molecular and chemic variation in pathologic fatigue manifested as a condition of exhausted or changed nutritional power. These changes bear a direct relation to the etiology and pathology of neurasthenia. Habit, diathesis and idiosyncrasy have an important influence in causing "dispositions to repeat organic processes," both normal and abnormal.

The study of the mental elements in normal and pathologic fatigue shows that the mental symptoms furnish a ready index of the "fatigue": *a*. The emotional tone is either one of well-being or ill-being, and the latter, with mental depression, indicates changes in the "sense of body," or common sensation, due to deficient energy, inanition and auto-intoxication; *b*, special disorders of intellect and will are shown by a neurasthenic weakening of voluntary attention or the mental power of inhibitory control and of memory, etc.

Analysis of normal and pathologic fatigue shows that the mental symptoms of the latter may be readily recognized, that they correspond with the physical events in neurasthenia and that all these phenomena, as far as they go, are in unity with the like conditions of melancholia. (More particularly with acute confusional insanity.[2]) The symptoms are objective and subjective, mainly the latter, which include the mental symptoms. These fall by analysis into four distinct groups relating to: 1, mental depression and a sense of ill-being; 2, diminished power of voluntary attention and mental control; 3, introspection and worry, with attention acting in its attracted form; 4, changes in the "sense of body," irritability and hyperesthesia, languor and anesthesia. Two consequent conditions become prominent and are of the highest clinical importance, morning tire and anesthesia of the sense of fatigue. This summary of symptoms leads Cowles to define neurasthenia (including both the physical and mental elements as expressions of the inanition and auto-intoxication of pathologic fatigue) as a morbid condition of the nervous system with as underlying characteristics, excessive weakness and irritability, or languor with mental depression and weakened attention.

From the inanition and auto-intoxication result the numerous conditions of uncertainty underlying the states which finally become the various obsessions or morbid fears. The cerebral basis of these was many years ago pointed out, as Spitzka remarks,[3] by Meynert, who called attention to the presumptive physiologic rôle of certain arched fibers which are known to unite adjoining as well as distant cortical areas with each other. I should, if asked to point to the chief factor on which the higher powers of the human brain depend, lay stress less on the cortical development as such than on the immense preponderance of the white substance due to the massive associating tracts. Although the projecting tracts are also larger in man than in any other animal, yet so great is the preponderance of the associating mechanism that the elimination of the former would not reduce the white substance of the hemisphere by one-half its bulk. Both projecting and associating fiber masses increase in a nearly geometric progression as we pass from the lower animals to man, but the ratio of progression of the associating fiber masses exceeds that of the projecting tracts. There are certain convolutions which are almost exclusively connected with *fibræ arcuatæ*, that is, with associating tracts, and which enjoy but little direct connection with the body periphery. It is reasonable to believe that such cortical areas so connected play an important rôle as a substratum of the abstractions. Such cortical areas and their subsidiary associating tracts, bound into the still higher unity of the entire hemisphere, constitute the substratum of the metaphysician's *ego*, or may even render an *ego* an impossibility. It is on accurate connection of projection areas with projectlon areas, and of these with "abstraction" areas that the faculty of logical correlation must depend. The correction of the countless errors made during a lifetime is possible only by an influence analogous to inhibition exercised by the association fasciculi, and the proper aim of every really educational system is to develop this control of the various cortical screens on each other; a correction which with approaching maturity is delegated to the "abstraction" field.

Ordinarily the functions of the "abstraction field" are performed in what, may be termed an automatic manner.[4] Physical exhaustion and other states of constitutional disturbances may destroy this automatism and the individual becomes actively conscious of the will-power needed to control conceptions constantly received from sense impressions. Upon the

[1] Annual of the Universal Medical Sciences, 1892, vol ii.
[2] See JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Dec. 28, 1894.
[3] Alienist and Neurologist, vol. viii.
[4] See article by myself, Alienist and Neurologist, 1890.

degree of weakening depends whether simple uncertainty, the morbid analysis of "grubelsucht," or the well marked imperative conception with its transformation into the imperative act result.

It is usually assumed that the *ego* is a centralized entity, when in reality, as Ribot points out:

"The *ego* is a co-ordination. It oscillates between two extreme points, perfect unity and absolute incoordination, else it ceases to be and all the intermediate degrees exemplified without any line of demarcation between normal and abnormal, health and disease; the one trenching upon the other. Wherefore the *ego* in the physiologic sense is the cohesion for a given time of a certain number of clear states of consciousness accompanied by others less clear and by a multitude of physiologic states which though unaccompanied by consciousness are not less but even more effective than the conscious states."

From these conditions result, in addition to the obsessions (imperative conceptions) or morbid fears, the anxious states which express themselves in respiratory or cardiac nervous disturbances, as well as the "helmet" sensation so often mentioned. With these occur the usual evidences of emotional instability which find their expression in the alternations of exaltation and depression that Oddo has called "circular neurasthenia." Like hysteria, the mixed neuropsychic state of neurasthenia may express itself in localized symptoms simulating other neuroses. Some of these of the spinal type have already been pointed out editorially in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Vol. XXVIII. One case which came under my observation was said to present even the eye symptoms of locomotor ataxia. The case proved to be one of neurasthenia with predominating spinal symptoms and with certain eye disorders correctable by glasses. Not merely in the spinal cord or in the brain is the line of least resistance in neurasthenia to be found. Very frequently the condition effects the medulla and produces secondary visceral symptoms.

Aside from these, temporary conditions of lithemia, oxaluria and glycosuria are produced, as has been shown by L. C. Gray of New York, Vigoroux and others. Nearly always there is present in neurasthenics an hydro-adipsia, at times amounting almost to a hydrophobia. In all the temporary conditions just described this hydro-adipsia appears, which adds to the difficulties of the treatment of the original state as well as of the complications resulting from these states and the states themselves. Balneotherapy was an old and in many instances beneficial prescription for these states. It however necessitated certain accessories which were injurious to the hyperesthetic nervous system of the neurasthenic, and which to a certain extent tended to undo whatever beneficial effect the balneotherapy might have on the hydro-adipsia. As a large number of cases were best treated by a modified system of rest cure which implied a certain amount of intellectual stimulus to train the will against the already formed or imminent obsessions or morbid fears or emotional instabilities, carrying out of measures against hydro-adipsia is somewhat of a problem. In many instances the addition of lime water to the milk, which forms of necessity so large a portion of the diet of neurasthenics, will introduce sufficient water to combat the effects of the hydro-adipsia. This however does not combat a metabolic instability evident in the lithemia, oxaluria and glycosuria. Among the agents which I have found peculiarly valuable in the treatment of these states and the general condition of neurasthenia has been the ozonate lithia water. This positively creates a thirst hitherto deficient in the patient as a rule; he complains (a complaint hitherto absent) that the water does not seem to satisfy his thirst. Hitherto the thirst itself has been absent and in this case appetite seems to grow by what it feeds on. The water exercises a peculiarly beneficial influence on the helmet-like sensation, on the dull pain complained of at the nape of the neck as well as that in the lumbar region. The water is taken with peculiar avidity just before resting after massage. It seems to exert also not immediately, but after some days, a beneficial influence on the gastro-intestinal manifestations of neurasthenia. Aided by an occasional mercurial it corrects the annoying intestinal atony which is so often present even after evidences of improvement in the general neurasthenic state.

As to dietetics of these complications, nothing need be added to what I have elswhere stated.[5] Each individual case will require special analysis, as Bremer of St. Louis has most forcibly shown. The condition can not be treated purely as an auto-intoxication since, as C. H. Hughes of St. Louis[6] points out, the auto-intoxication often is an expression of the nerve exhaustion and aggravates this; hence both the auto-intoxication, its results and its cause need treatment.

In dealing with the morbid fears, ridicule is most injudicious, since this tends to make the patient reticent and thereby weakens an already feeble co-ordination. Ridicule will not introduce a healthy conception checking these fears, but will increase the patient's morbid distrust of himself and thereby increase the general pathologic fatigue. The same is true of medical examinations which lay undue stress on certain manifestations of the general disorder. The evil effects of laying undue stress on the utero-ovarian manifestation has been emphatically pointed out by Goodell, but the same evil effects are observed in cases treated by ophthalmologists, who recognize only the eye side; by rhinologists who recognize only the "catarrh" side; by dyspepsia specialists, who recognize only the gastric side; or by spermatorrhea specialists and by others who concentrate the patient's attention entirely on one symptom, thereby affording him new material for morbid anxieties. I have not dwelt on the use of either faradic, galvanic, or static electricity, because each of these has its indications in the particular case and, like all other procedures, is apt to be abused when used on general principles. The neurasthenic must be treated as a patient, not as a disease label, bearing in mind that his condition is due to pathologic fatigue and its consequences.

[5] Therapeutic Gazette, April 15, 1897.
[6] Alienist and Neurologist, Vol. xviii.

IS IT ETHICAL FOR MEDICAL MEN TO PATENT MEDICAL INVENTIONS?

Presented in the Section on Materia Medica, Pharmacy and Therapeutics, at the Forty-eighth Annual Meeting of the American Medical Association, held at Philadelphia, Pa., June 1-4, 1897.

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I use the word patent in the sense commonly accepted by the medical profession, viz., "restrained from general use," and, by medical men I mean physicians, surgeons and apothecaries, for they are all practicing medical arts.

In his primitive state man lived on the fruits of the field without being obliged to till the soil, but as people multiplied on the face of the earth, agriculture was one of the first arts which man practiced. The inventor of the plow may have named it, or the name may have been given it by some one else. At any rate, the name plough was given by somebody who coined the title for that purpose, and it was afterward modified to plow. Here we have an original invention of the purest kind, and a coined word given to it as a title. I can not conceive any reason why the inventor of the plow should have desired to prevent others from using it, but, for the sake of argument, suppose the inventor of the plow had concluded to prevent others from using the trunk of a tree for scraping up the soil. Theoretically, his every neighbor was as strong as he, and combined they were stronger, and therefore he could not have maintained the exclusive use of the plow if he had so desired. It is evident therefore that the inventor does not possess a natural right to the exclusive use of his invention. In other words, he has no property in it *per se*. How did it ever come to pass that inventors acquired property rights in their inventions? After a time improvements were made in the plow, and it became more complicated and required a greater amount of skill for its construction. Certain men made better plows than others, and their neighbors desiring to possess the improved article, and recognizing the peculiar ability of some men to make plows, commenced to employ them for that purpose, exchanging commodities of their own for plows. Every improvement in the plow devised by one man was carefully concealed from others engaged in the manufacture of plows, so as to obtain commercial supremacy thereby. As the world continued to grow and competition became more general, inventors of those improvements now commenced to quarrel with each other, each one saying that no one had a right to copy their inventions. What applied to the art of manufacturing plows applied also to every other art, as soon as it was invented. The government finally intervened to stop the quarrel, and passed laws for that purpose. These laws are known as patent and copyright laws. They are designed to promote progress in science and the useful arts. They do so by granting to authors and inventors for limited times the exclusive use of their respective writings and discoveries. They recognize the value of authors and inventors to the community and encourage authorship and invention. They are designed to secure the publication of knowledge and not to lock up knowledge to trade secrecy, or to protect inventors in the exclusive use of the knowledge of their inventions. The moment an invention is patented full knowledge of it is divulged, as the application for patent must contain full knowledge of the invention in language sufficiently plain for any one skilled in the art to duplicate the invention. A copyright on a book, while restraining the writing itself from general use for a limited time, does not in any way restrain the use of the *knowledge* contained in the book from the public. While under the copyright and patent the book and the invention are restrained from general use for limited times, both become free to the use of the public after the right has returned to the public who gave it. Commerce as well as science is thus benefited by these laws.

The medical profession has for many years past permitted its members to copyright their books. Is there any reason why they should refuse to sanction the patent which restrains a medical invention from general use for a limited time in exchange for the publication of exact knowledge of the invention for the benefit of science?

The arguments which have been used against medical men patenting medical inventions are as follows:

1. Every substance used for the treatment of the sick should be left free from all control by secret processes and patents, so that they may be manufactured and dealt in at the least expense to the consumer, *i. e.*, the sick; and be open to free investigation by all who desire knowledge concerning them.

2. For the purpose of creating a demand as articles of commerce medicines must be advertised, and the advertisements being worded for the purpose of selling goods creates a fictitious demand for the products advertised, thus displacing older and well-tried drugs by medical novelties.

3. The only object in patenting a medical invention is to utilize it for money-making purposes, which can only be done successfully by the adoption of trade methods. Physicians who patent medical inventions or offer medicines for sale enter the domain of trade thereby, and cease to be professional men. The liberal professions, viz., theology, law and medicine, deal exclusively in advice, not in material substances. This differentiates them from the trades, and if medicine is to remain one of the liberal professions it must not adopt trade methods.

4. The medical inventor who has a material substance for sale will unconsciously use his best endeavor to promote the sale of his goods, rather than make it his chief object to benefit his patients who may purchase his goods. This would change the nature of medical practice from a beneficent one to a distinctly commercial one, and while all legitimate business is beneficent, in one sense of the term, the physician's vocation is pecularly philanthropic, having as its chief end the relief of human suffering, not the acquisition of money.

The physician who copyrights his books is not tempted thereby to do anything contrary to beneficent and professional liberality because it would not be profitable for him to do so. Does not the same thing apply to the patenting of surgical instruments? What object could a surgeon have in misrepresenting his instrument? Could there be a fictitious demand created for an instrument by advertising it? Could he displace the use of better instruments by publishing extravagant claims concerning it? If so, it would not be public policy for the profession to allow a surgeon to patent has instruments.

How about the pharmacist? Should he be allowed to patent medical inventions? It seems to me that the same arguments apply to him that apply to the physician and surgeon. If he is allowed to patent medical products he is at once tempted to resort to misrepresentation for the purpose of creating a demand for them, that he may displace older and tried methods of treatment by therapeutic novelties which may, or may not, be improvements on what are already known. Moreover his vocation is that of preparing medicine for therapeutic use, and he has no right whatsoever to practice therapy, unless he is educated and trained for that purpose.

I admit that there is a trade element in pharmacy which does not pertain to the practice of therapy.

The physician deals in advice only, while the apothecary has material substances for sale. The apothecary is obliged to carry a large stock of goods which he deals in as merchandise, and is obliged to serve the public at large as well as the medical profession. To do business successfully he must adopt some business methods; but there are some business methods which may be adopted with propriety by the dry goods merchant that can have no place in pharmacal practice. On account of this trade element in the practice of pharmacy, and the necessity of investing capital which must be protected in the conduct of his business, I believe that the pharmacist should be permitted to patent, not medical products, but medical processes, apparatus and machinery employed to prepare medicine. But secret processes and methods are a hindrance to progress in the knowledge of pharmacy, and an open door to fraud. There may be trade secrets the divulging of which for the benefit of competitors might cause serious injury to perfectly legitimate trade interests. If a commission of competent medical men, removed entirely from trade, and outside of politics, could be appointed to act as a board of control in this connection, so that the interests of science, the professions and the public, could be protected from all danger of fraud, I can see no reason why such trade secrets should not be permitted to continue for limited times. But, in the long run, they must be published for the benefit of medical science, and the arts of pharmacy and therapy, which are dependent upon this publication for progress.

There is a business known as the "patent" or "proprietary" medicine business which stands right in the way of the proper understanding of the patent and trade-mark laws by the physicians and pharmacists. It should be described as the secret nostrum business, for the products which it has for sale are rarely patented, but are monopolised by secrecy of composition, secret processes, or in other ways in which secrecy forms a part. While secrecy is the rule there are other medicines which belong to the same class, for while their nature may be known, the advertisements concerning them are purposely worded to create a fictitions demand far in excess of their merits. The name "patent" for a secret medicine is a misnomer, for, as the *Scientific American* says, a thing patented is a thing divulged;" and the name "proprietary" is a misnomer also, for, as already shown, there are no property rights in a medicine to be had, without patenting it. This business is characterized by misleading names, misleading methods, and an abuse of the trade-mark in which the only titles by which the compounds are known are made the subject of monopoly.

According to all authorities on trade-marks which I have consulted, the commonly accepted name of an article can not be a trade-mark. Everything must have a name given it, and whatever name is given a thing becomes its proper appellation. Referring to the origin of the trade-mark, Browne, in his comprehensive work on the subject, says, "trade-marks had their origin in a general ignorance of reading the combinations of cabalistic characters that we call writing. A written certificate of the genuineness of any article of merchandise could not be understood by the nomadic peoples who desired to barter natural products for something made by the hands of skilled artisans. A simple emblem, as a crescent, a sun, a star, an animal, or other object copied from nature or devised by fancy, when once associated with a particular class of goods, or the handicraft of a certain man, would readily be understood."

The only possible use for which a trade-mark can be legally put is to indicate ownership or origin. A trade-mark and a patent have nothing in common, and yet it is the object of the nostrum trade to make it appear that the trade-mark creates a monopoly. This is done in the following manner: A fanciful name is devised and applied as a title to a medicine, and the title is registered in the Patent Office as a trade-mark. Then the nostrum manufacturer says, "you can not manufacture my nostrum, for I have a secret process which prevents you from duplicating it, and even if you can find out how I make my nostrum, you can not deal in it under the title which I have registered as a trade-mark."

The absurdity of this claim will become perfectly apparent to anyone who will take the trouble to study the meaning of a trade-mark. A trade-mark is a thing of natural right and common law. The government has no power to grant anyone the use of a trade-mark. Registering a title as a trade-mark does not make it such. A title can not be a trade-mark and a title at the same time. The name of a thing belongs to the thing itself, not to the one who names it. Because the name was coined or invented makes no difference. Every word in the language was invented or coined at some time or other. No man has a right to monopolize part of the common language even though he may add a contribution to it by coining a name to represent a thing or an idea. The trade-mark system, so-called, is not a system of trade-marking at all, but an attempt to defeat the patent law by a misuse of law, and to obtain privileges of monopoly which that law will not grant, and which the public would seriously injure itself by granting. It is a system of secrecy and unlimited monopoly, and a cloak to fraud and deceit.

Taking all these facts into consideration, it is apparent that the patent, trade-mark and copyright laws should be so interpreted and administered by the court that they will secure the greatest good to the greatest number, and aid in attaining the end of government, viz., "moral, intellectual and physical perfection." It is not the object of these laws to create odious monopolies, to throw a mantle of protection over fraud, to enable quacks and charlatans to encroach on the domain of legitimate medical and pharmacal practice, or to support an advertising business designed to mislead the public in regard to the nature and value of medicines as curative agents. The morals of the community are injured by some of this advertising, intellectual vigor is impaired by the use of many things advertised, and physical as well as moral degradation frequently results. Crime is often inculcated—even the crime of murder, that the nostrum manufacturer may profit thereby. Cures for uncurable diseases are promised and guaranteed. Every scheme that human and devilish ingenuity can devise to wring money from its victim is resorted to which can be employed without actually bringing the advertisers into court. All this wicked quackery parades under the guise of "patent" medicines, and asks the protection of our courts. It is time for the medical and pharmaceutic professions to unite and unmask this monster, and show the public its true nature. And this can be accomplished in no better way than through a study of the object of the laws which the secret nostrum manufacturers are now endeavoring to prostitute

for their own advantage, and the teaching of the public what these laws were enacted for, and how they should be applied for the benefit of the country.

I do not wish anyone to take what I have said as a reflection on individuals or concerns. The secret nostrum business in some of its phases has assiduously found its way into the medical arts, and physicians, pharmacists, and manufacturing houses seem to have forgotten to a certain extent the obligations which they owe to the public. Medicine, in all its departments, must be practiced in accord with scientific and professional requirement or it will sink to the level of a commercial business. The end of medical practice is service to suffering humanity, not the acquisition of money. Money making is a necessary part of the practice of medical arts, not however, its chief object. This fact must be kept in view always. Once lost sight of, and trade competition substituted for competion in serving the interests of the sick, medical and pharmacal practice will become an ignoble scrabble for wealth, in which the sick become victims of avarice and greed. Better set free a pack of ravening wolves in a community than to change the end of medical practice to a commercial one, for physicians and pharmacists would soon degenerate into quacks and charlatans and take shameful advantage of the community for gain.

DISCUSSION.

Dr. J. V. SHOEMAKER—I have been recently almost a victim of a trade-mark firm who brought suit against me to the extent of a hundred thousand dollars, if I did not retract certain statements with regard to two words which were joined together in my text-book on "Therapeutics and Materia Medica." The words had been well known to the profession for years, but they had appropriated them as a trade-mark and denied every one else the right to use them. One of the greatest evils which the medical profession is suffering from is the use of coined words in medicine. I say this after corresponding with two law firms in Western cities, and I was obliged to get legal advice to prevent them from interfering with the sale of my book. They objected to the use of this compound word because they claimed that they had a secret method of combining these two substances, which no doctor or other pharmacist could use. This shows the evil effects of doctors using drugs which are not official.

In the last few years, during which it has been my privilege to teach materia medica, I have taught the student to prescribe official remedies. I have alluded to this subject merely for the purpose of adjusting the fraternal relations between the druggist and the busy doctor, who should see that every drug used in his practice could be obtained from every pharmacist. They should both unite to prevent the sale of those remedies which wring millions of dollars from the pockets of our patients. At the time I referred to I made a little study of the matter and went to several hospitals, and found that more than half of the drugs were trade-mark preparations. That is to say, that instead of spending one hundred dollars, they were spending four hundred dollars for proprietary medicines which were slowly absorbing the resources of the institution. If I had my way I would not have any remedy used in a hospital, which could not be found in the pharmacopeia, or could not be purchased in every drugstore. The physician who prescribes proprietary remedies is simply driving his patient to self-prescribing. I hope that the time will come when our committee will drive all proprietary medicines from our exhibition rooms.

Dr. ECCLES—I may say that the last speaker has not been the only victim. I have been vilified by the trade-mark people, and threatened with prosecution. I have taken the ground that all secret preparations are detrimental to medicine, and the better a preparation it is the greater harm it does to medicine. If every manufacturer had followed the course of one firm in Brooklyn, Dr. E. Squibb, it would have been a splendid thing for medical science, for then everything would have been left open to the profession. As regards patents there are two sides to the question. There should be some reward for these original investigators in order to stimulate invention. As regards antipyrin of Dr. Knorr, it is not a secret preparation and it is well known; it might not have been invented had it not been for the fact of the reward offered by the patent laws. The inventor may labor for years, and spend money in experimenting, and if he succeeds in discovering something useful and valuable, he should have his reward. I think that there should be some way arranged by which he could surrender the patent and the government buy it outright. As it is, some inventors are paid too much.

Dr. HOFF of Pomeroy, Ohio—To illustrate the improvement in the sentiment of the profession toward secret or trade-mark medicines, I may say that, in 1845, when I was a student at Jefferson College, one of the faculty gave permission to a manufacturing firm to exhibit his preparations to the class. The Professor stated that he would not recommend them but the students could use them if they saw fit.

Dr. KOENIG—I hope that the time may come when no secret or patent preparations will be allowed to be exhibited at these meetings. I may cite the recent meeting of the Pennsylvania State Medical Society as a precedent that we would do well to follow. The Committee on Entertainment resolved to abandon the usual exhibition and they went to the State Pharmaceutical Society and invited the pharmacists to use the exhibit hall in a display of legitimate pharmacy. The exhibit was a great success. Physicians need to have their attention directed to official preparations as there are a great many preparations in the pharmacopeia which physicians never use.

Prof. REMINGTON—I have much admiration for the devotion of Dr. Stewart, who has been pegging away at this subject for twenty years, and I am glad to see that his work is at last beginning to tell. I only want to say that, if the AMERICAN MEDICAL ASSOCIATION would only do something on this subject it might do good. The physicians are more to blame than the pharmacists. I was present at a meeting of the Pennsylvania State Medical Society, fifteen years ago, and I was asked to present the "National Pharmacopeia and Formulary." I made some suggestions then which were received enthusiastically by Dr. Howard A. Kelly and others, and the exhibition which Dr. Koenig has referred to is a result and an outgrowth of that discussion at that meeting.

The Committee on Revision, in 1880, refused admission to cosmolin, a proprietary article, but admitted the same product under the name of petrolatum. The result is that it can be bought now at seven or eight cents a pound, although, as a proprietary article the price was fifty cents per ounce. The public really does not know how much money has been saved by this action of the Committee. I approve highly of the interest and co-operation of the general profession in the work of the pharmacist and especially in that of the Committee on Revision.

Dr. HAINES—The Medical profession has the reputation of being the most liberal profession on the face of the earth. This came up at Atlanta, where a delegate was refused permission to register because he had applied for a patent; he had not even obtained a patent. The ASSOCIATION set its stamp of disapproval upon the holding of a patent by a physician. It has been said that a man should be rewarded for his labors by giving him a patent, but our fathers demanded nothing of this kind. They contributed everything freely for the sake of science and humanity, and we should emulate their high aim and not stoop to commercialism by holding patents.

Dr. SQUIBB—I agree with Dr. Stewart in most points, but I think that his final statement conflicts with points that he made earlier in the paper. He gave me the impression, at first, that he believed a physician should patent his inventions and discoveries, but later he reverses this. I do not myself think that anything should be patented by either physician or pharmacist; I am sure that the patient would not be benefited thereby. I may say with regard to the sale of patent medicines, that the medical journals themselves are largely responsible for the existence of this class of remedies. If the journals would cease to distribute their advertisements the sales would fall off 75 per cent. If editors of journals would use their influence to discourage the publication of such testimonials, it would be of great advantage.

I would like to say something about what Dr. Stewart has done in previous years; I have agreed with him in the main and do not care to discourage his good work any longer.

Dr. F. E. STEWART—With regard to patents, my idea is that the present trade-mark and patent laws, if properly applied and carried out, would do more than anything else to restrain the sale of this class of preparations, and end the patent-medicine business. When I appeared before the Committee on Patents, at Washington, and they agreed with my views and asked if I wanted to modify the law. I said, no, only enforce the law.

The trade-mark proprietary medicine purveyors do not want any analysis of their preparations to appear in the journals or text-books, and threaten prosecution to those who publish this information.

To show their animus toward pharmacists, I may refer to articles which they have had published in the public press, stating that the druggists are unreliable and not to be trusted, and will put up their own drugs, which are inferior, the only reliable product being the proprietary preparations.

REPORT OF THE COMMITTEE ON PHARMACOLOGIC INVESTIGATION.

Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Forty-eighth Annual Meeting of the American Medical Association, at Philadelphia, Pa., June 1–4, 1897.

BY H. H. RUSBY, M.D.

CHAIRMAN.

This committee was appointed in August last, immediately after the naming of the delegates from the American Pharmaceutical Association to attend this meeting, and proceeded at once to arrange for the investigation of several problems, selecting phytolacca, virburnum and strophanthus as the drugs to be studied.

The design was to secure the separation in a pure state from each of these drugs of all those constituents upon which its activity might possibly depend, to ascertain by physiologic examination which of these were the active constituents, to determine the percentage in which they existed naturally in a sample of average good quality and to fix methods for the selection of a drug meeting this requirement. In the case of phytolacca it was desired to determine the differences in composition between the drug in a fresh (that is, undried) condition and after drying and how, if at all, such difference affected its medicinal properties. In the case of viburnum it was desired to ascertain how, if at all, the v. prunifolium and v. opulus of the pharmacopeia differed and whether the other viburnum barks found in the market under these names shared their properties and to how great an extent. In the case of strophanthus it was desired especially to determine whether the use of the so-called "brown seeds" is justifiable, and in a general way to fix the comparative value of the other varieties on the market.

The results of the committee's efforts on this occasion illustrates the importance of this method of organizing such work considerably in advance of the time when the reports are to be presented. It has been found, in spite of the utmost diligence, that the year has not afforded sufficient time for the completion of more than one of these problems. The determination of the composition of poke-root has progressed satisfactorily, but the examination of the constituents has not yet been made. It is believed that the active constituent of viburnum has been discovered, but its isolation has presented remarkable difficulties and a sufficient supply is only just now being prepared for study. The complete report on these two drugs will therefore of necessity be postponed until another year. The results of the study of strophanthus are indicated in the program for this meeting. Prof. Smith Ely Jelliffe of the New York College of Pharmacy has made a study of the seeds in their crude condition. Dr. Alfred L. R. Dohme has made a thorough chemic study of the different seeds and is able to draw conclusions as to their comparative value based on such examination. Dr R. W. Wilcox of the New York Post-Graduate School of Medicine has studied clinically the preparations put in his hands by Dr. Dohme, and has thus completed the series of studies, so that the Revision Committee of the United States Pharmacopeia will now be able to define and describe this important drug on an intelligent basis.

SURGERY ONE HUNDRED YEARS AGO.

AN HISTORICAL STUDY

BY DR. GEORGE FISCHER.

DEDICATED TO THE GERMAN SURGICAL ASSOCIATION.

TRANSLATED FOR THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

BY CARL H. VON KLEIN, A.M., M.D.

CHAPTER XII.—FRENCH AND ENGLISH WAR SURGERY.

(*Continued from page 542.*)

In order to have as much *fresh air* as possible, the minister of war of the republic instructed the commissioner of health to provide the necessary means. He decided upon the following: "Upon his admission every patient was to have his hands and feet washed; in the wards which the attendants were to sweep twice a day, there must be basins with pure water; facilities for bathing must be provided in every stationary hospital; twice a year the wool in the mattresses must be renovated and the wards must be whitewashed at least once a year, and the bedsteads and tables be frequently washed. For every ward a certain number of beds was allowed, and this number was never to be exceeded; they stood from two to two and a half feet apart and never in more than two rows. The basins were oiled, outside and inside, and after use were immediately cleaned. In order to admit fresh air into the wards doors and windows were opened, the latter being provided with rollers and ventilators. The heating was done by fireplaces or stoves, with funnel-shaped draft-pipes. More than 15 to 16 degrees of heat was not permitted in the rooms and when the weather was very warm the floors were sprinkled and fresh green leaves strewn about. All fumigation was forbidden as it only concealed bad air without creating fresh air. Neither stagnant water, manure heaps nor rubbish were tolerated in the neighborhood of the hospital.

Gradually the system of the *transportation* of the wounded in the French army developed. In the war of 1758–59, even on the second and third days after the battle, Colombier saw the wounded lying on the field half dead, naked and trod upon, and indeed, this was on the side of the victorious army, and it must have been much worse on the side of the enemy. The ambulance wagons were very poor; the sick lay close together upon the straw without sufficient covering. Colombier, therefore, proposed to construct wagons in which the wounded should be suspended in a kind of bed, in order to protect them from too violent jolting. In each wagon, which should be fourteen feet long and five feet wide and drawn by four horses, were four hanging berths with straw-sacks and covers for four patients, besides two seats for the surgeon and attendant. It could be entered from the front as well as from the rear. For the sake of lightness, the wagon was made of wicker and covered with painted linen. The cover could be opened and had two windows for the admission of air. Four-wheeled wagons were first introduced for transport in the year 1788, one wagon being allowed to about a thousand soldiers. These were so cumbrous and unwieldy, that the soldiers preferred to be carried from battle on guns, boards, etc. Colombier desired

that every wounded soldier who had been carried to the depot on the day of battle should bring with him a bulletin (une note), concerning his wound and bandage, which when there was a sufficient surgical force could very well be carried out (l. c. ii, p. 314); another idea which by no means belongs to our time as one might suppose. It is well known that in the beginning of the campaign of 1866, in the Prussian army, diagnosis tablets of parchment were distributed and pinned upon the breast of the wounded soldier; an arrangement which later the Berlin Conference acknowledged to be very much to the purpose. This military physician also required that a sufficient force of men be at hand to transport the wounded, so that they could be operated upon and bandaged as soon as possible; for he had already had the experience that a much greater proportion of those who were operated upon on the battle field recovered, than of those who were treated two or three days later when swelling and fever had set in. Every transport train was accompanied by a number of surgeons, attendants and a detachment for escort. The republic stipulated those injuries which transportation would aggravate, and forbade the conveyance of all wounded about the head, with a broken limb, with a large blood vessel ruptured or with a badly inflamed wound. On the decampment of the army no one could be left behind in the field hospital. Transportation by water was given the preference. During Napoleon's wars, many improvements were made by Percy, the chief of the medical department. He introduced new ambulances (chairs de chirurgie), which were drawn by four horses, accompanied by surgeons and attendants, and contained bandaging apparatus and litters. He also organized a corps of litter bearers to carry the wounded out of the battle to the place of bandaging, and to serve as attendants on the ambulances. They were armed with lances, which served at the same time in carrying the wounded, for with two lances, pedestals and canvas which the litter bearers carried in their haversacks, a litter could readily be constructed. Larrey introduced a new wagon which, led by surgeons on horseback, moved with great rapidity under the fire of the enemy and picked up the wounded. In Egypt he transported the wounded in baskets suspended on each side of a camel.

Among the *French military* physicians of the last century were some excellent practitioners, most of them members of the Collège de St. Côme in Paris. There was scarcely a prominent surgeon who had not served a long time in the army; among them were J. L. Petit, Maréchal, La Peyronie, Le Dran, Arnaud, Louis, Morand, Garengeot, La Faye, Sabatier, Pelletan and others. *Ravaton*, chirurgien-major in Landau, was an eminent military surgeon who, after an experience of thirty-six years in the wars, wrote a "Chirurgie d'armée ou traité des plaies d'armes à feu," 1750 (2d Ed. 1768), the most exhaustive work of his time on gun-shot wounds. This work, in which were given many conservative cures of gun-shot fractures, and in which amputation was recommended above the malleolus with two flaps instead of below the knee-joint, created a great sensation in the Académie de Chirurgie. It excited such violent debates, that it was proposed by several that the book be burned in the court yard of the academy as unworthy of French surgery. However, this proposition appeared too intolerable and was rejected by the president, Le Martinière. As a medical writer on military subjects *Colombier*, who had participated in the wars in Germany, became known by his five volume "Code de Médecine Militaire" (1772), a counterpart of Pringle's Observations. All that pertained to the well or the sick soldier, in the field or in the garrison, and to hospitals, army diseases, duties of the military physician, etc., were exhaustively treated. To the military surgeons of a later time belonged *Bagieu* and *Trecourt*, who like Ravaton, approved of amputation above the joints and pointed out the evil consequences of too long continued strict diet in surgical diseases. Then came the quarrelsome, impatient *Lombard* of Strassburg, who, in 1792, as chirurgien en chef, accompanied the army of the Rhine to the field. His service consisted in showing the necessity of purgatives in various surgical diseases, and in contending against the hasty and frequent bleedings practiced by French surgeons in injuries. In the "Remarques sur les lésions de la tête" (1796), he protested against the abuse of trepanning. At the close of the century French military surgery reached its highest development under Napoleon, who through his new plan of war, made new demands upon surgery and had the good fortune to be supported by the great talents of a Percy and a Larrey. Their personal example as well as the high respect and dignity which Napoleon accorded to them awakened among the military physicians an extraordinary zeal. Baron *Percy* († 1825), inspector-general of the French military medical system, had participated in the wars in Germany and Spain, and had distinguished himself by his operative skill and had eminent executive ability. Besides his improvements in methods of transportation, during a battle, he visited on horseback all the surgeons, and had them carry their instruments in cases from their shoulder belts, and lint and bandage material in their pistol belts, so that they could render assistance as quickly as possible. Later, he invented light wagons for conveyance. His prize essays on the use and form of scissors and on the extraction of foreign bodies from shot wounds, have been already mentioned. In his "Pyrotechnie chir. pratique" (1794), he taught the use of the cautery, especially in cases of hospital gangrene, and recommended moxa in cases of inflammation of the hip and knee-joints and vertebræ. He also advocated resection of the joints. *P. F. Moreau* deserves the highest credit for the introduction of this operation ("Observations pratiq. relat. à la résection des articul. affect. de carie," 1803). The Frenchman, *Boy*, appears to have been entirely forgotten; under the republic he was chief surgeon of the army of the Rhine, and also made a reputation for himself as an orator and poet, but died young—a martyr to his profession. His work on gun-shot wounds, which was distributed to every hospital in the army, is in the highest sense worth the reading (1795; in G. Wedekind's "Reports of the French war hospital system" I. p. 294–366, 1797). *Larrey's* principal activity falls within this century.

In *England*, military surgery fared badly. Most of the army surgeons were uneducated quacks, frequently given to drunkenness and practicing their profession in illegitimate ways. When a soldier had served for a little while with a regimental surgeon as an orderly, preparing plasters, then it might happen that he would be appointed assistant, and later successor to the surgeon. Each regiment had a surgeon who was at the same time apothecary, and an assist-

ant; the former received four shillings daily, the latter three shillings, sixpence. Properly, each regiment was to have a hospital, for which the crown provided thirty pounds; yet there was frequently so great need that the sick soldier had to be sheltered in public taverns. There they lay in dirty beds and were badly cared for by their comrades. The hospitals left much to be desired, and were frequently smoky and so narrow that several patients shared one bed. The soldier paid one penny monthly for the purchase of medicines. This money was handled by the surgeon who sought to supplement his own meagre salary out of it, so that in many regiments, the necessary medicines were lacking both in quantity and quality. This lack of money had the direful consequence, that in the middle of the century the surgeons in the field amputated without scruple, because they received £5 for every amputation. Only a few of them possessed good instruments. Sections were seldom made, as anatomic knowledge was too scant and the people had a prejudice against that operation. The station of the regimental surgeon, in accordance with his culture, was contemptible. He was subordinate to the ensign and quartermaster, and had to take much abuse and indignity from the officers when the latter thought that a soldier had remained too long on the sick list. There prevailed also, in the country, the improper custom of allowing the regimental surgeon to fill an officer's place, so that, for instance, he would be sent as a captain with his company upon orders. In the regular troops the surgeon could be sentenced to prison like a common soldier by the youngest officer, and could be subjected to corporal punishment for an offense against the officer.

A few words as to this. Although the discipline in the English army was very mild in comparison to that of other nations, for the Prussian soldier was punished severely if the wind blew the hat from his head, yet the *whip* was much in use. The regimental surgeon was present at the execution of a sentence, and could order a cessation if life was endangered. The flogging was usually about the neck and shoulders; deserters were sentenced to three hundred, sometimes to a thousand stripes, which were given at different times. When the soldier had received a few hundred he was taken into the hospital, and when his wounds were healed he was flogged again. The executioners drew the arms of the delinquent above his head, fastened his wrists to a wooden spike, suspended him in the air and then laid the stripes about his thighs. In the meantime the surgeon saw that the lashes of the whips were sufficiently flexible, for they were very much more painful when they became bloody through long use, and they instructed the executioners to strike chiefly upon the shoulders and not on the neck and ribs. To increase the punishment, they used whips on which the blood was drying. In a few regiments running the gauntlet was in use. The men were placed in two rows and with rods struck at the delinquent who, naked, had to run between them (Hamilton, "Duties of a Regimental Surgeon," 1789). In Austria, under Joseph II., the soldiers were beaten upon the thighs with rods, instead of upon the back as formerly; they also condemned a man to run the gauntlet through three hundred men ten times or more, back and forth; this sometimes resulted in inflammation of the lungs. The Prussian soldier of the Seven Years' War was beaten upon the back with a rod or sword, sometimes contracting "a lung disease in consequence of the considerable concussion."

Among English military surgeons, *John Hunter* stood at the head. His short treatise on gunshot wounds was epoch-making, because it for the first time treated the art of healing, etc., on a physiologic basis. He discussed principally the general surgical questions, and entered less into the different gunshot injuries. He also wrote on the diseases of the troops in Jamaica. In addition to Hunter, *Jackson* of Dublin alone deserves mention; he collected in the American war some good notes on gunshot wounds. On the other hand, there were several illustrious physicians in the English army: Pringle, Don. Monro and Brocklesby. Although the military activity of the English nation could not be compared to that of France and Germany, and the organization of their military medical system was far behind that of France, yet we owe to England a few of the most important innovations, which only came to be fully appreciated a hundred years later. *Pringle first taught the value of fresh air and ventilation in hospitals, Brocklesby first introduced barracks, and Earl Stair made the first specific agreement with the enemy for the protection of the wounded.*

J. Pringle, court physician and physician general of the English army, wrote "Observations on the Diseases of the Army" (1752), a book which has no equal in European literature; he includes in it his researches into the nature of putrefactions and ventilation, and rich experiences in hospital fever. He valued *fresh air* as the chief essential to the cure of diseases, for nothing is more injurious, nothing involves greater danger than infected sick rooms, but this is not believed to its fullest extent. Neither diet nor medicine is of any use, so long as the air is impure and foul. This comes about through stagnant water, heaps of refuse and moldering straw, and through the overcrowding of the hospitals. Such is the case in full, ill-kept barracks and on ships where the people have too little room and are kept on board too long. In order to avoid the diseases arising from such conditions, Pringle recommended that the army change its camp oftener, and in camping in swampy regions to overflow the fields entirely with water. Upon the outbreak of dysentery they should move the camp. In the vaults of the closets, which should be very deep, a thick layer of earth should be thrown every day, and any one should be fined who made use of any other place than the closets. During the progress of a contagious disease, too many patients should not be sent to the hospital, lest the contagion should spread there; the lighter cases of dysentery should be kept in the camp and the others, as far as possible, remain in the regimental hospital. Without this *dispersion of patients* the main hospital would become too greatly overcrowded. The best hospitals were the most airy and roomy houses, barns, stables, granaries and churches. Since fresh air and not warmth was necessary, a large barn should be preferred to a little warm farmhouse. Besides this, Pringle recommended that the regimental hospitals be scattered through several villages, instead of crowded together in one, wherein the maintenance and attendance on the patients were more difficult. He desired that the regiments take their sick with them, so far as the transport wagons could comfortably accommodate them and the diseases would permit it. We have described, in chapter IV, his suggestions for the continual

renewal of fresh air in the hospitals by means of *ventilation*.

Don. Monro and *Richard Brocklesby* served under Pringle. They both took part in the Seven Years' War and wrote on hospital fever and field diseases of the English army. Brocklesby has the great honor of having first introduced *barracks*. With the utmost earnestness he recommended these buildings, thrown together out of planks, provided with openings for the admission of light and strewn with straw, for hospitals, on account of the free passage of air. To prevent contagion he had the straw and sand on the floor changed frequently, and in these light board houses he saw many more patients recover than in the low rooms.

October, 1758.—"There was a great crowd of sick brought to the Isle of Wight, and all the little out-buildings, granaries and miserable huts which could be procured for money or for the love of God, were insufficient to accommodate all the sick. In this necessity some of the gentlemen of the hospital advised that a few huts be built in the woods for that purpose, that the floors be covered with planks and the roof with new straw, which would keep out the wind and rain, and that these huts be large enough to accommodate 120 patients or more; the mechanics who undertook the building demanded £40. These huts were actually built, and indeed so badly that they seemed utterly inadequate to their purpose. It was afterward found that the patients who were taken there were obliged to endure extraordinary cold and much dampness, yet the number of deaths was far less than elsewhere, although the patients had the same diseases and were given the same medicines, diet and care. They also recovered more quickly than in the warm, close huts that had been hired about Newport, where they appeared to have usually had better care."

September, 1760.—" . . . I sought back of the camp, in the adjoining field, the spot which was driest and most exposed to the free air, and had the place hollowed out. About the edge of the excavation I had stakes set upright and extending about six feet above the surface of the earth, while between these stakes planks were placed, which I had covered on the weather side with fresh straw; over the planks I had beams laid, which were likewise covered with straw, and in this way I made a hut which was almost large enough for my purpose, where I had sufficient air and where it was warm and dry. It cost 10 guineas to build a roomy and comfortable hut which would hold about forty patients. The straw, which was worth about £5, was upon the order of the general taken from the public stores; in addition the masons of the regiment were ordered to build a fireplace and chimney. . . . But what most deserves attention is, that although many patients were brought to this house who lay sick of the genuine putrid spotted fever, yet only one or at the most two have died of it. I ascribe these fortunate recoveries more to the pure, fresh air which they breathed in this house, than to all the medicines which they were obliged to take every six hours or oftener."

Campaign of 1761.—"As in the Gloucestershire regiment alone nearly a hundred men a day were taken sick, I took occasion to bring to the attention of Colonel Berkeley how easily we could help or overcome this difficulty, if he or the regiment would expend the little money necessary to build such huts, each of which could accommodate some twenty-four or twenty-six men, and should be made by digging five feet below the surface of the earth and covering the planks and beams with a good layer of straw, so that the rain could not get through. As Mr. Berkeley exhibited on every occasion a rare humanity and generosity, I found no difficulty on account of the expense. The carpenters of the regiment were immediately ordered to make the foundation, and he commissioned me to give directions for the building according to my pleasure. In a few hours the solid ground was excavated thirty-one feet in length, eighteen or nineteen feet in width and some five feet in depth. In place of walls, I had the stakes fitted with boards and a roof made above, which was all covered in some way. So I had a roomy, airy, yet sufficiently warm dwelling, into which one could go by means of six steps which I had cut into the earth in order to prevent slipping in wet weather. At one end a fireplace was made of bricks, and out of his boundless humanity the colonel had that part of the ground covered with boards on which the patients could lie very near the fire. In various places in the roof air holes were made, which served for windows and could be opened at pleasure. In a short time three such hospitals were prepared. . . . All the patients received there, with the exception of three at the most, were cured completely, and the number of sick had never been so small as at the end of this campaign."

1762.—"They improved these field hospitals by having a somewhat large, airy porch built at each door, so that the patients who were able to move about somewhat could get fresh air and eat their meals there."

"I am convinced that such huts as I have described above could be built at any time and without difficulty; and since the arrangement of the ordinary hospital can in many respects be so very injurious to the patients, I trust that the measures which I have recommended above will in future receive the approbation and acceptance of those in authority."—("Œconomical and Medic. Observations" from the year 1758-1763, 1764. Trans. by Selle, Berlin, 1772).

He was the first who insisted on placing at the head of a field hospital a physician or a surgeon instead of an officer: "The power of the physician in the hospital should be just as great as that of the commanding officer in the field." (A hundred years were spent in convincing men of the justice of this maxim, for only in the North American war of our own time was the physician the absolute ruler of the hospitals.) The French military hospitals pleased Brocklesby better than the German, in which he especially condemned the crowding together of patients, and the negligence and unskilfulness of the physicians. But far more of the sick and wounded died in the French field hospitals than in the English. Brocklesby indicates the reasons for this in the following words: "As the French surpass all the nations of our time in the knowledge of surgery, so it is well known that they are the most miserable and unskilful physicians in all Europe, especially since their surgeons have sought to impress upon the world that the knowledge of anatomy comprised the highest and most perfect degree of medical science."

The most important step toward the protection of the wounded, which can be regarded as the *precursor of the Geneva Convention*, we also owe to England. The wounded and the sick were for the first time considered, in the year 1689, in a treaty between France and Spain, when each country paid for the care of its wounded in the hospitals of the other, and since that time care has been taken that those from the side of the enemy should have all necessary treatment and nursing. They agreed upon the nature of the attention to be given in the hospitals and each country was to pay for the maintenance of its own soldiers (Gurlt). But it was still customary to transport the patients great distances, by reason of which many of them died. And it was necessary to move the hospitals frequently for the sake of safety, and this also had evil consequences. When, in the year 1743, the English and French were arrayed against each other on German soil, the English Earl Stair, before a battle had taken place, made the proposition to the Duc de Noailles that the hospitals on both sides be declared neutral and be protected by both sides. Noailles agreed to this; it was concluded on June 27, at Dettingen. The soldiers lay upon the damp ground and eight days after the battle about five hundred were taken with the dysentery. The English established a hospital in the village of Fechenheim on the Main, in which, aside from the wounded, about five hundred, mostly dysentery patients, were accommodated. When the Duc de Noailles established his army on the other bank of the Main, opposite this hospital, he notified the English that his soldiers had been expressly ordered not to disturb the hospital in any way. They conducted the whole campaign in this way. Pringle, the physician-general, thus relates it.

Very soon after the battle, on July 18, in Frankfort-on-the-Main, the envoys of the two leaders concluded the actual treaty. The chief provision in this was that the wounded who had fallen into the enemy's hands were to be most carefully treated. Neither physicians, surgeons nor apothecaries were to be held as prisoners of war, but were to be returned as quickly as possible. Each side cared for the wounded and paid the expenses. They could not only receive back the physicians when they desired, but could send them wherever they pleased provided with letters of protection, only they were not allowed to serve again prior to the exchange of prisoners. Sick and wounded were safe in the hospitals and were not considered as prisoners of war. It is seen that these stipulations could scarcely be improved on, although in later wars they were frequently and everywhere violated.

In order to preserve the connection, we will here notice what they *thought in Germany and France of barracks and neutrality agreements.* Colombier considered barns excellent for hospitals, and better than churches, provided sufficient fresh air could be secured. When in the year 1774 a wing of the Hôtel Dieu in Paris burned, Le Roi, a member of the Academy of Sciences, submitted to that body the following proposition: That the number of patients in each hospital should be kept as small as possible, and that in the construction of hospitals special regard should be had for ventilation. As wards abutting directly on each other were unserviceable, he devised a plan by which the wards should stand some distance apart like the tents in the field or the pavilions in the gardens at Marley (standing isolated among the trees). Every ward should be like an island in the open air, so that when the external air was set in motion the air inside the ward would be renewed without passing through another sick room. There should be several openings in the vaulted roof and also in the floor, communicating by pipes with the outer air, so that a renewal of the air would be constantly taking place; stoves were also to be provided. He anticipated a possible objection to the expense of wards covering so much ground, and asserted that the highest possible cleanliness and the purest air possible should be the only true ornament and glory of a hospital. His propositions were well received but nothing was changed. (Hunczovsky, Med. surg, notes on his travels through England and France, 1783, p. 96.) Bilguer, in Germany, knew the successful experiments which Brocklesby had made with barracks, in the war, and appeared to appreciate their advantages, for he said that they were easily built by the carpenters of the army, they allowed a better supervision of the regimental stewards and avoided the injurious transportation to the hospitals by which so many wounded died. He also shared the view of the English concerning the absolute authority of the physicians and surgeons in the field hospitals. Nothing is said of the fact that Bilguer introduced barracks. The Prussian decree of the year 1787, ordered great sheds to be built for summer use, but the first practical application of barracks in Germany was due, it appears, to Joseph II. In 1789 he had "movable, wooden, adjustable hospitals" built, and found them serviceable. In the War of Liberation several barracks were built. The chief surgeons Görcke and Völtzke, assisted by a very meager force, built three large barracks in the year 1807, when after the battle of Prussian-Eylau, more than eighteen thousand wounded Prussians, Russians and French were crowded together at Königsberg. In the summer of 1813, also, various wooden sheds with 300, 400 and 500 beds were built, and in the autumn were walled up with brick and provided with stoves. Bischoff at that time strenuously opposed the barracks because they were not so healthful and clean as other buildings and were in greater danger of damage by fire.

In regard to the agreement for the protection of the wounded, this idea of Earl Stair, which guaranteed perfect safety to the hospitals, met with perfect approval in Germany during the Seven Years' War. Similar and often literally copied treaties were concluded from that model, between the Austrians and Prussians, in 1757, and between the French and Prussians in 1759; but in practice they were by no means so far advanced. At the end of that war, Baldinger asserted that the misery would be unspeakably diminished if all the princes were in harmony on this one point. Schmucker also expressed the wish that the warring powers would, at the beginning of a war, unite to guarantee safety to the hospitals, so that the latter could be established after the battle in the nearest convenient place. The patients should be allowed to remain here free and until they had completely recovered or, at least until they could be transported without disastrous consequences. Many wounded of both sides would be saved in this way, who under existing conditions perish miserably during the long transportation. It appears to have been an exception in the Seven Years' War, for an Austrian commander to leave a guard and a physician with a wounded Prussian officer when the army advanced. The rule was to take as prisoners the hospital, its physicians and equipment, and to hold them, although the enemy always took the very best care of wounded soldiers, as Theden observed. In France, Colombier contended for neutrality treaties and desired that the generals of both armies should mutually agree never to take the sick as prisoners; and that the defeated army should recover from the victor permission to immediately seek out their wounded upon the battlefield and have them bandaged by their own surgeons. Pourquoi ne pas faire une convention entre les deux armées, qu'on ne prendra jamais les malades, ni les hôpitaux? C'est un acte d'humanité digne de ce siècle. . . On doit respecter l'asyle des blessés et des malades. Il est d'usage qu'on ne les maltraite pas; au contraire les généraux ont une attention singulière à ce qu'ils ne manquent de rien.

When our own time wishes to boast of the humane sentiment of the Geneva Convention it must be remembered that for a hundred years the warring powers, in international agreements have been solicitous of the welfare of the wounded who have fallen into the enemy's hands, and of the protection of hospitals.

With this chapter we close the history of the surgical profession in order to enter more into surgical science. A glance at "German Medicine" may be allowed by way of transition.

(To be continued.)

Senile Heart.—Balfour's rules (*Hospital Times and Medical Gazette*) are in substance as follows: 1. Not less than five hours between meals. 2. No solid food between meals. 3. For all those with weak hearts, the principal meal in the middle of the day and their meals as dry as possible.

SOCIETY PROCEEDINGS.

British Medical Association.

Proceedings of the Section on Medicine at the Sixty-fifth Annual Meeting, held at Montreal, Canada, August 31 to September 4, 1897.

WEDNESDAY, SEPTEMBER 1.

The Section was called to order by STEPHEN MACKENZIE, M.D., who at once delivered his address,

ON THE INFLUENCES THAT HAVE DETERMINED THE PROGRESS OF MEDICINE DURING THE PRECEDING TWO AND A HALF CENTURIES.

It dealt with a history of medicine since the foundation of Canada to the present day, this being suggested by this being the first Meeting held out of Great Britain.

Concerning the improvement in medicine during the past 200 years, the most prominent was the study of anatomy. Physiology is based primarily upon this branch; morbid anatomy too follows it closely. Due prominence was given the microscope in the development of medicine, as one of the connecting links. Due homage was paid the workers in the various branches of medicine for their part in the development of practical medicine, especially Harvey; Laennec, for his development of auscultation in the diseases of the chest; Jenner, Pasteur and Koch and others in carrying out the protective inoculation idea.

Mention was made of the advancement in education, the development of the university idea. The history of modern medicine is largely the history of scientific methods. Great strides have been made in clinical medicine, the greatest being the separation of enteric and typhus fevers; the development of the micro-organism of malaria and the proper classification of the pathologic conditions of the kidney; the opening of the closed book of the nervous system is very prominent. Addison's discoveries of the connection between suprarenal bodies with asthenia, gastric irritation and cutaneous pigmentation; the thyroid gland and its pathologic importance; and the importance of the integrity of the ductless glands of the economy. The development of medical societies and associations is gratifying.

ARTHRITIS DEFORMANS

(rheumatic arthritis), more especially its relation to rheumatism, nervous diseases and tuberculosis, was the subject for discussion.

Dr. JAMES STEWART of Montreal—The remarks were founded on some forty cases under observation in Montreal, viz., twenty males and twenty females. Family history of rheumatism in eight cases; tuberculosis in five cases; history of gonorrhea in the majority of the males, in the females absent in all but one; exposure to cold in five only; worry in four cases; alcoholism in five. In 15 per cent no cause could be ascertained: in 50 per cent. some acute infectious disease was present. Rheumatoid arthritis and nervous diseases; similarity between joint troubles and tabes dorsalis and of rheumatoid arthritis; supposed to be disease of cord; changes in joints; atrophy and sensory disturbances; changes in joints found in tabes, atrophy and hypertrophy, there being little difference between this and syringomyelia, clinically or pathologically, there being polypoid growths and intracellular changes; these intracapsular changes are found early in rheumatoid arthritis; pain is found in the latter, but in the nervous joint troubles not found. Early atrophy of muscles in rheumatoid arthritis probably explained by joint changes, but no loss of sensation is found in this atrophy. The evidence pointing to nervous origin is meager. In the forty reported cases, three cases only had history of tuberculosis. There is an inheritance of arthritic tendency, and history of tuberculosis may lead to rheumatoid arthritis by lowering vitality. History of acute rheumatism often found, viz., four cases of the forty; history of acute attacks, often history of subacute form. In 30 per cent. onset was either like acute or subacute rheumatism. No recognized well-marked dividing line between subacute and chronic rheumatism and rheumatoid arthritis; they are at two ends of scale, the intervening forms it is difficult to classify. It is to be hoped that further bacteriologic examination may develop the infectious nature of rheumatoid arthritis.

Summary.—It is a disease prone to occur in persons of rheumatic tendency. No sharp distinction between various forms of rheumatism; recent investigations point to infectious nature.

Treatment.—Medicinal treatment is unsatisfactory; the most successful is the Scotch douche; dry baths more effectual, sand and superheated dry air; copper cylinders used, the temperature 240 to 300 degrees, inducing perspiration; increased frequency of pulse; twenty cases treated; pain caused in several; gain in weight follows; increase of mobility in many.

Dr. SHINGLETON SMITH of Bristol—The name chosen, rheumatoid arthritis, stamps the whole discussion. The disease is not a rheumatism at all, but an arthritis. One case has developed this idea. A young lady 16 years of age, of good history and family, acute polyarthritis followed in two years by entire and complete crippling. What is gonorrheal rheumatism? A form of blood poisoning, and certainly there must be a source of infection from other parts of the body; we should have some positive evidence of the bacteriologic cause. Some such cause as this, however, will serve better than rheumatism, but until we have this the cause must be held *sub judice*. In the very acute stage during the arthritis, the very active antiseptic treatment may stop it short.

Dr. LINDSAY of Belfast—We all agree that there is a great deal of obscurity hanging over this disease. I have seen no connection between this disease and tuberculosis, but I believe there is a connection between rheumatism in its various phases and this disease. We often see chronic rheumatism slowly develop, in months or years, into rheumatoid arthritis. Cold, exposure, privation are much the same as lead to ordinary rheumatism. Salicylate treatment is ineffectual in rheumatoid arthritis. The tonic line of treatment, cod liver oil and suitable diet, is most often successful.

Prof. ABRAHAM JACOBI of New York—Prof. Stewart did not tell us what arthritis deformans is. What are we to mean by rheumatism? No cases can we conscientiously call rheumatism except the acute articular rheumatism. In rheumatism we have to deal with membranes; in rheumatoid arthritis with the cartilages. This is the real clinical difference.

We have not any coccus localized as a cause, and we should not let this enter into a discussion of this subject.

The only treatment that is of any use is directed toward the nervous system. Arsenic in increasing doses, continued for months and months.

Dr. T. C. WILSON of Philadelphia—I believe that advance of knowledge of disease of joints is hindered by use of the term rheumatism. Rheumatism should be perhaps limited and called rheumatic fever. Senile mono-articular arthritis is really a form of rheumatoid arthritis and not chronic articular rheumatism. Arthritis deformans perhaps can be applied to a wide group of cases. Rheumatoid arthritis of rapidly developing kind resembles clinically the ordinary type of rheumatic fever, but convalescence is not progressive and a series of subacute attacks leaves the joints permanently crippled; all suggest some agency affecting the joints, probably microbic.

Dr. F. C. SHATTUCK of Boston—We know almost absolutely nothing of this disease; we only know it is something like rheumatism. It is one of the opprobria of medicine. As to the presence of micro-organisms in this condition, Dr. Goldthwaite of Boston has been unable to confirm findings of an English observer, who reports findings of micro-organism in arthritic inflammatory fluid. In all cases coming under observation I have tried to discover some concealed source of suppuration, but this connection was traced only in one case.

Dr. MOOREHOUSE of London, Ont.—I have seen quite a number of cases, both multiple and single joints. The latter chiefly of the hip-joint. Two cases, same family: One, boy eight years old, had "ordinary" rheumatism, leaving him with valvular lesion, followed by general arthritis deformans, and he lived to be 22 years of age, and died probably of asthenia: general and complete muscular wasting.

There is a distinct relation between rheumatism and the subject under discussion. The wasting seen to such an extreme extent I believe due to lack of exercise and malnutrition due to the disease.

Dr. J. E. GRAHAM of Toronto—We must have distinct ideas of the pathologic condition, but we clinically have trouble in making diagnosis. There is much advantage from administration of arsenic, more than from any other drug.

Dr. T. D. GRIFFITHS of Swansea—We should try and find out if it is a disease *per se*, or a symptom. Look on it as a symptom of disordered economy, a development of various conditions as the result of various causes: Shock to nervous system, cold, bad nutrition, etc. It is not like gout and smallpox, due to specific causes. The treatment is general, tonic, arsenic, cod liver oil, good diet and fresh air. Find out in the early stage whether it is gout, rheumatism or arthritis deformans: a very difficult thing oftentimes.

Dr. V. P. GIBNEY of New York City, said in his remarks on treatment: Since last fall I have used superheated dry air, a modification of Montreal apparatus, and in general way am satisfied with the results. Function was improved and painful exacerbations removed. I believe that a great deal can be accomplished if hot air can be preceded by surgical proced-

ures, breaking up deformities and at once putting in hot air. Protect these joint in exacerbations; do not use passive motion. Give absolute rest. After exacerbation has passed and you feel cartilaginous and bony deposits beginning resolution, partial motion can be produced by application of special still apparatus. If range of motion 10 or 15 degrees the apparatus should be used to limit motion to this, as exacerbations are often produced by trauma beyond this degree.

Dr. TYSON of Philadelphia—I adhere to views which allow certain relation between the rheumatisms. Treatment has been unsatisfactory. I have never seen even a suggestion of cure. Results are purely palliative. General tonic treatment: Cod liver oil, arsenic and other rational measures.

The CHAIRMAN stated that the disease presents so many varied aspects that it is difficult to present any one. The essayist's work is the result of personal work. It is doubtful if anyone will leave with a different opinion from what he had when he entered, because of the lack of the unanimity of opinion; still the discussion is of great practical value. He holds to the view that while arthritis deformans has relations remote to rheumatisms it is a more or less distinct entity. If a person once begins on track of arthritis deformans, its ultimate results will be the same. Clinically, if the disease gets perfectly well without any change in conformation disease, it is not arthritis deformans and no matter what initial clinical symptoms and you have deformity they are cases of arthritis deformans. If you see former cases in a number of years, again with deformity, we are at sea as to whether the primary disease was an acute rheumatism as we first thought.

Dr. SUTTON thought the disease was essentially a disease of debility and occurred in families.

Dr. STEWART, in closing the discussion, said that clinically there is often great difficulty in diagnosing cases. There is no clinical or pathologic distinction and many diseases are grouped under this head.

Dr. JAMES TYSON read a paper entitled

THE PROPER USE OF TERMS TO DENOTE MYOCARDIAL CHANGES.

Credit was given Professor Adami of Montreal for his observations on the associated dilatation and hypertrophy of the heart in various pathologic conditions of the heart. The term dilatation should be reserved for enlargement of cavity of heart with associated degeneration of heart walls. In hypertrophous dilatation the walls are not degenerated.

Discussion was participated in by Dr. WHITTAKER of Cincinnati and Dr. N. S. DAVIS of Chicago, who said that cardiac fatigue and exhaustion should be used more frequently. Cardiac weakness is often found with beginning pathologic changes which leads to cardiac exhaustion with congestions.

Dr M. H. FUSSELL of Philadelphia reported

TWO CASES OF HEMOPHILIA.

Case 1.—The grandparents were healthy, but one died of phthisis. Father had had epistaxis in infancy; no tendency to bleeding in the family. When a baby he was cut with a bottle and bleeding followed for some time; at 3 years old had severe epistaxis; at 5 years cut finger bled for a week; soon after he cut scalp and the stitches cut through and still bled for several days until stopped by hair lip pins; tooth pulled, bled since last May. Weighs fifty-six pounds; pale, pigeon-breasted, systolic second sound murmur; venous hum in neck; spleen can be felt; left ankle joint larger than right; numerous subcutaneous hemorrhages of shin. Treated with calcium chlorid. In July had bleeding from nose following a blow.

Case 2.—Male, when eleven months old fell from bed and struck head; bleeding from pulling teeth and cuts on head; again from nose and cut on forehead; at present his nose is bleeding. Subcutaneous hemorrhages on left arm, large and hard. Glandular enlargement; blood contains 40 per cent. hemoglobin. On July 29 he fell on right side from bicycle; has had large subcutaneous hemorrhages on right side, which disappeared in about one month.

Both children given calcium chlorid, mother believes without improvement.

Dr. ALLEN A. JONES—It is not often that a leucocytosis is found without some inflammatory action somewhere.

A paper by Dr. J. B. MCCONNELL of Montreal entitled "Pyopericardium following Pleuro-pneumonia; Pericardiotomy; Recovery, with Case," was read by title.

THURSDAY MORNING, SEPTEMBER 2.

Dr. ROBERT SAUNDBY of Birmingham, read a paper on

TREATMENT OF DIABETES.

He said that a stereotyped diet should not be prescribed; clinical experience should be the criterion for treatment. Orthodox diet is a pretense. Potatoes are forbidden, while fancy articles containing much carbohydrates are allowed. Carry on weekly weighing, with measuring twenty-four hour urine; if weight is stationary or increasing patient is doing well; even the sugar is increased. Proceed experimentally, allowing more or less starchy foods as indicated.

Polyuria and extreme thirst is best met by diet and opium at night. In strict diet the sugar and starch are entirely excluded. Cakes made of gluten flour previously fermented may be allowed. Breakfast: fat bacon, tea or coffee, and mineral water. If sugar disappears can give experimentally a potato and milk. Light wine may be used cautiously.

From 10,000 grains before treatment, the sugar generally falls to 2,500 to 3,000 grains under treatment. The starch of cereals is more productive of glycosuria then that of potatoes.

Strict diet to begin with, adding carbohydrates as experimental observation will warrant, is the treatment advocated by all foreign observers and has many supporters, though they may be silent in America.

Dr. SIDNEY COUPLAND—A strict diet in which all carbohydrates are excluded is impossible. Every case of diabetes is an individual one and in some marked effect is produced by a trivial change in diet. We cannot expect permanent and marked effect from change in diet alone, for we must know more of pathology before any rational treatment can be advocated.

Dr. SHINGLETON SMITH of Bristol—In the diabetes of young people we must go very carefully, but in that of older people we can have much more latitude in the diet. A certain amount of indulgence in carbohydrate craving must be allowed in some cases.

Dr. EBENEZER DUNCAN of Glasgow—The amount of sugar in the urine in some cases is not a guide as to progress of case. If diabetes is due to marked disease of pancreas no diet will do good. How far we can allow carbohydrates is a matter of experiment, guided by no increase in weakness or loss of muscular power. We must never give way to cravings of the patient for they invariably get rapidly worse.

Dr. TYSON of Philadelphia—Dr. Saundby's treatment is practically that of the speaker. It is often easy to find cases drop into one of two categories, mild and severe. In those from whose urine it is easy to eliminate sugar by diet, they are relieved with varying facility and ease. The cases of glycosuria will run over to diabetes if let alone. Cases containing under 2 per cent. of sugar in urine have been cured. Keep under observation, pure proteid diet being best, at least use it once a month for two days, and sugar will be found to disappear entirely. Cases of the second class are those in which pure meat diet will not entirely eliminate sugar; how far shall we limit the diet? A certain proportion of sugar is of itself harmful in the urine, and the diet should be restricted.

A pure proteid diet has been stated, by Dr. Munson, to be harmful, increasing the diacetic acid in the urine, this being responsible oftentimes for the coma. These foreign substances are due to the breaking up of the body albumin, but the speaker's views do not entirely coincide with those of Dr. Munson. It is practically impossible to keep one on a purely proteid diet, and the latitude which we are forced to permit will prevent the formation of these substances.

Prof. ADRAHAM JACOBI of New York City—A good deal of what we know and do in the way of dietetic treatment is not the result of experimententation as much as of experience. Diet must be changed according to age. The very young will not stand strict carbohydrates; the very old much better. Many do not thrive on any diet. If they emaciate, the carbohydrates must be increased. The younger the child, the quicker they die, but they last longer by entirely restricting the carbohydrates. The question of milk: A diabetic never gets worse with milk, the speaker gives milk in every case and they are better for it. Duncan's recommendation is not best. Give milk in any form it can be taken. Old persons do less well on strict diet than on mixed diet.

Dr. LINDSAY of Belfast—We must pick our cases. A good deal of liberty in diet is safe in older people, but experience has been uniformly unfavorable in the very young. The clinical course is best to be watched rather than the urine.

Dr. TYSON, speaking again, said that in the mild cases spoken of, the milk diet can be given, but without any special benefit or harm; safe with other diet. Not so though in the severe form. The urine as a rule is the best guide as to the condition of patient.

Dr. WRIGHT of Ottawa—From experience I believe there is a distinction between glycosuria and diabetes, the former occurring chiefly in elderly people and in them there is no pathologic condition. Cases of healthy young men, under 35 years of age, sometimes show sugar in the urine without polyuria or other symptoms. These are found only when they present themselves for life insurance examination. In one

man, unusually well developed, never ill, there is a glycosuria, absolutely without symptoms.

The speaker wished to know of any treatment, dietetic or otherwise, indicated.

The CHAIRMAN said that we are very prone to be routinist and the essay was of great importance in showing how much more beneficial it is to find out how much of carbohydrates a patient can stand and desires, and that the weight and clinical condition of the patient should be the index as to his condition, and not the urine and its sugar.

Dr. SAUNDBY, in closing the discussion, said that he did not advocate *latitude*, but the reverse, giving a diet which was tolerable to them, even in children. A little carbohydrate can be given, especially potato, for it agrees when no other form of carbohydrate can be tolerated. Four to six ounces can be given and well tolerated. All diabetic children die and we should try to make their lives as tolerable as may be. In each case it is an experiment. The doctor should only be required to analyze the urine. He has always used a milk diet, with others, for years, giving some daily with advantage. If during the first week we decide to watch the sugar, do not give it. The percentage of sugar is misleading; rather get the total amount in grains or grams. Polyuria, thirst and increase of sugar are guides. Loss of weight permits a certain increase of sugar, even if sugar in urine increases.

Dr. EBENEZER DUNCAN of Glasgow read a paper entitled

TREATMENT OF DIABETES BY URANIUM NITRATE.

Dr. West's paper first attracted the writer's attention to this remedy. Increase in weight and decreased thirst being the first result noticed. The late reports from various sources have not been so favorable. Experimental researches show that the remedy produces a nephritis. The author's observation shows it to be a safe remedy in 15 or 20 grain doses daily. Several cases of typical diabetes were reported, in which the nitrate of uranium was used after a trial of diabetic treatment, the result being in one case the urine reduced from 9 to 3 pints, the sugar from 40 grains to 10 grains, and proportionate increase in weight. The diminution in sugar and urine and increase in weight is due, the author believes, to the sugar consuming cells being strangulated by the uranium nitrate. He believes the remedy is of most use in neurogenous form of diabetes and practically none in the pancreatic form.

Dr. TYSON of Philadelphia used uranium twenty years ago and felt that it was of no use, but then used it in 2 grain doses t. i. d. Lately he has again been using it, but had to cease on account of producing diarrhea (in 5 grain doses). He had been afraid of such large doses but will try it again.

Dr. SAUNDBY of Birmingham had used the remedy in small doses and abandoned it. Since West's paper he had seen some good in larger doses, but does not consider at all that it is a specific.

Dr. DUNCAN, in reply, said he had not asserted it was a specific remedy, but he did say that improvement followed in every case. The diarrhea he believed was due to over-feeding, as undigested food was passed.

Dr. J. E. GRAHAM of Toronto read a paper entitled

CROSSED HEMIPLEGIA DUE TO INJURY TO THE PONS VAROLII

and exhibited the patient.

Accident occurred when the boy was eighteen months old. Nothing is known of family history. A stick entered the mouth and passed through the junction of the hard and soft palate. Considerable force was used to remove it. He cried from 5 to 11 P.M., then vomited blood, and convulsions occurred at intervals for three days; on the third night paralysis of right leg and arm, and face on opposite side. Swallowed with difficulty. In bed seven months. Convulsions nearly every day, and for five years they have occurred at night. Tonic is followed by general epileptiform convulsions; more frequent when constipated. Mind clear, but not as bright as others. Right side colder than other (these notes made five years ago). Scar half inch long on left side of palate at present.

Considerable atrophy of right side. Face drawn to left side; perhaps paralysis; wrist moved with difficulty; elbow well; foot half amount of flexion; awkward limp; patellar reflex exaggerated on right side; ankle clonus present.

Note made today: Face flushed; extremities cold; pupils equal; no paresis or nystagmus; contractures of elbow, wrist and fingers of right side; atrophy of right lower extremity; complete flexure of ankle impossible; intelligence below average; sensation normal, save right upper extremity, slower than other side; ankle clonus on right side; No athetoid movements. The paralyzed arm reacts to electricity more readily than left arm. Case of hemiplegia showing hemiplegia of whole right side and on left side of face also.

The splinter passed through into the inside of skull, and inflammatory lesion extended involving sensory sense as well as motor.

Dr. E. B. ANGELL had under observation a case in which there was a tumor of the pons in which there was an absence of reaction of degeneration. In the contraction of the leg, free incision of the tendons certainly gives increased function.

Dr. HENRY KOPLIK of New York read a paper entitled

BACTERIOLOGY OF PERTUSSIS.

Interesting cultures were exhibited in the department of bacteriology. Kohn and Neuman have made original investigations, but the whole matter was left somewhat chaotic. They were unable to say whether the diplococcus isolated was specific.

The author used serum from human blood, using hydrocele fluid. This will not prove favorable to other micrococci, streptococci not growing on this medium. In pertussis we have small white pellets which observers say contain bacillus; composed of epithelioid cells and mucus and contains small bacillus. If complicated by pneumonia, pellets not found, and it is difficult to isolate bacillus; uncomplicated cases can isolate it easily. In sixteen cases he has found it grown on hydrocele fluid in thirteen. Delicate, punctate coating, and grows from this on agar and gelatin; not on potato; in air; stains with methyl blue. It is motile, thinner than diphtheria bacillus, .8 micromillimeters long. Only .3 in breadth, an exceedingly delicate micro-organism.

Impossible to produce symptoms of pertussis in lower animals and only on human subjects can it be produced.

Dr. JAMES GRANT—In the treatment of children with pertussis, vaccination frequently influenced the disease, modifying it greatly. I ask the author why this is so? What is the action of the vaccination on the bacteriologic forms?

Dr. KOPLIK, in reply, said he could not explain the phenomenon unless by referring to the action of erysipelas on malignant growths being similar.

A paper was read by Dr. JOHN H. MUSSER of Philadelphia entitled

THE DISAPPEARANCE OF ENDOCARDIAL MURMURS, PRESUMABLY ORGANIC.

Permanency of murmurs serve to aid diagnosis between anemic murmurs. Murmurs disappear and reappear when result of valvulitis, as mitral stenosis and aortic regurgitation. No report has been made of disappearance of aortic stenosis or of tricuspid murmurs. Peculiar accentuation of second sound is an important associated sign of mitral stenosis. Mitral obstruction murmurs are variable. It may disappear temporarily or permanently in the course of the disease or afterward. Nearly all authors confirm this as quoted by the author: Tyson, Walsh, Strümpell, Loomis, Hayden, Bramwell, Grieves, Williams, Boyd, Saunders and others, various causes being assigned. Presystolic murmur may be mistaken for this. Aortic regurgitation is the most persistent of all organic murmurs; some of the above authors stating it is rarely that it disappears. He reported a case of vanishing aortic regurgitation after being present one year. Patient died of pulmonary edema and autopsy showed a large calcareous spot on each leaflet; pressing these deposits down rendered the valve competent. We have pseudo-insufficiency which must be excluded in making diagnosis, also dilatation of ascending aorta and yielding of sinuses of Valsalva. In mitral regurgitation murmur which disappears, it is difficult to tell whether it was organic or inorganic. Other organic conditions causing regurgitation may be mentioned; a rupture of tendon of leaflet which sometimes floated in the cavity, sometimes between leaflets.

The following papers were read by title: "A Contribution to the Subject of Brain Tumors and Their Surgical Treatment," by Dr. M. Allen Starr of New York city; "The Enteric Fever of Armies, Contrasting the Disease in Tropical, Subtropical and Temperate Climates," by Surgeon-Major Hamilton of Plymouth; "Reynaud's Disease, Following Protracted General Erythema," by Dr. A. McPhedran of Toronto; "A Few Observations on Bermuda," by Surgeon-Captain Cummins of Bermuda; "Notes on Bermuda as a Winter Resort," by Dr. Eldor Harvey of Bermuda.

American Pharmaceutical Association.

IMPORTANT ACTION OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The following Preamble and Resolutions was presented to the AMERICAN MEDICAL ASSOCIATION by the delegation from the American Pharmaceutical Association at the last annual meeting of the former ASSOCIATION held in Philadelphia in June.

The document was referred back to the Pharmaceutical Association for ratification, and passed unanimously by that body in general session at its recent annual meeting held at Lake Minnetonka, Minn. It was then referred to the AMERICAN MEDICAL ASSOCIATION for final action at the next annual meeting in 1898, at Denver:

PREAMBLE AND RESOLUTIONS.

"To the AMERICAN MEDICAL ASSOCIATION:

"We, a delegation of pharmacists, representing every section of the United States, being appointed by the American Pharmaceutical Association to attend the meeting of the AMERICAN MEDICAL ASSOCIATION, in Philadelphia, the first Tuesday in June, 1897, do herewith present to your honorable body the following preamble and resolutions, hoping that your honorable body will endorse the same that it may express the sense of the National Medical and Pharmaceutical societies in relation to matters of mutual interest to the professions of medicine and pharmacy.

1. WHEREAS, Secrecy in regard to the origin, nature, composition, and methods of preparing medicine is a hindrance to science in that it conceals knowledge and presents an open door to fraud, and

2. WHEREAS, Monopolies in medical products enable medical monopolists to create a fictitious demand for the same by advertising the favorable side only, and suppressing anything that might injure sales, and

3. WHEREAS, Such a method of advertising gives undue importance to medical novelties, and

4. WHEREAS, Secrecy and monopoly and misleading methods of advertising are contrary to beneficence and professional liberality, and

5. WHEREAS, Pharmacy, or the science and art of preparing medicine is part of medical science and practice, and physicians are dependent upon pharmacists for the selection, preparation and standardization of medicine; for the publication of the knowledge of drugs and the methods of preparing them for therapeutic use; for the establishment of medicinal preparations in scientific forms that the knowledge thereof may be intelligible to future generations, and form part of medical literature, and take its place in text books for the instruction of students about to enter the professions of medicine and pharmacy and thus form part of what is known as the science of medicine, and

6. WHEREAS, The "United States Pharmacopeia," being devoted to the drugs and preparations used by physicians in treating the sick with directions for preparing the same, should contain a list of the newer drugs and preparations introduced to the materia medica, with processes for preparing them, and standards for their excellence and purity, and

7. WHEREAS, Many of the articles advertised in the medical and pharmaceutic journals claiming to be true pharmaceutic preparations are not admitted into the United States Pharmacopeia, though some of them are of sufficient value to be made official, for the reason that their only names are claimed as private property, and their constituents are not divulged, and

8. WHEREAS, The composition or origin of many of these articles are trade secrets, a danger threatens medical literature, for without a knowledge of their drug composition, pharmacopeial references to them as remedies for the treatment of disease is meaningless from a scientific standpoint, therefore, be it

1. *Resolved*, That we, as representing the profession of pharmacy, do hereby express our condemnation of secrecy and monopoly in medical products, and at the same time express our desire that the medical profession shall unite with the profession of pharmacy in raising the standard of professional and scientific requirements so that the practice of pharmacy shall be maintained at its true position as a part of medical science and practice, hoping that by so doing the time may soon come when physicians and pharmacists may work together in harmony in promoting progress in the knowledge of medicine, and in the application of medical agents to the relief of human suffering. We do hereby accept the definition of a secret remedy given by the official Medical Board of Saxony: "Secret remedies are all those agents sold for the prevention and cure of disease of man and animals, of which the ingredients, percentage composition and method of preparation are not made public when first announced for sale. Such information must be complete and exact in readily comprehensible language and made known to all desirous of such information." And be it

2. *Resolved*, That we request that all manufacturers of pharmaceutic preparations shall comply with scientific and professional requirements; shall throw open every medical product to legitimate competition; shall publish the working formulæ for all medicinal preparations or compounds; shall give to each preparation on the market, when first introduced, a name under which all may manufacture and deal in it, such name to be appropriate and descriptive of the article to which it is applied, and compatible with scientific nomenclature; and shall furnish the Committee of Revision of the "United States Pharmacopeia," if requested, with the composition of each secret or semisecret combination, so that the article described, if found worthy, may be made official in the "Pharmacopeia," and be it

3. *Resolved*, That we recognize the commercial element in pharmacy which requires that capital invested in the manufacture of medicine should receive legitimate protection, provided it is employed in accordance with beneficence and not used for the purpose of misleading the public by lying advertisements and injuring the public health; therefore, while not sanctioning the patenting of medicinal products themselves, we do sanction the patenting of machinery and processes for manufacturing medicines, provided that they are really new and useful inventions, and providing the applications for patents are not drawn up in such a manner as to create monopolies in the products themselves so that others can not manufacture them by other machinery and by the use of other processes. By this, we mean to say that all medical products should be open to free competition, and as the supreme court would not sustain the patent of Professor Morse because the application was so drawn up as not only to protect him in the use of his machinery and apparatus, but to give him a monopoly in the transmission of messages by electricity, and thus to hinder progress in the development of a most valuable discovery, so the courts should not sustain any patent which will create a monopoly in the manufacture and sale of a medicinal agent or composition of matter used in the relief of human suffering, and be it

4. *Resolved*, That it is our purpose to do away with the use of fanciful words employed as titles for medicinal preparations to the confusion of medical nomenclature, and replace the same by legitimate trade marks, or marks of trade used as commercial signatures to distinguish between two or more brands of the same article as manufactured by various firms, and be it

5. *Resolved*, That sufficient pharmacy should be taught in our medical colleges to enable students entering the practice of medicine to discriminate between persons engaged in the legitimate practice of that art, and those pretenders practicing pharmacal quackery; and that sufficient knowledge of physiology and therapy should be taught in pharmaceutic colleges to enlarge the scope of knowledge of pharmaceutic students so that they may afterward realize the responsibility of their own vocation, limit their practice to its proper sphere, and not trench on the prerogatives of physicians, that the medical and pharmaceutic professions may hereafter work in harmony for the purpose of promoting knowledge in medical science in all its departments, raising the standard of education in both professions, and furnishing the public with a higher class of medical and pharmacal service, and be it

6. *Resolved*, That the United States Pharmacopeia should be made a text-book in both medical as well as pharmaceutic colleges, that physicians and pharmacists should be urged to provide themselves with copies of that work, that both professions should be urged to take more interest in its decennial revision, sending accredited delegates from medical and pharmaceutic societies thoroughly instructed as representatives to the convention for revising the "Pharmacopeia," and that the increased revenue derived by the Committee on Revision from the larger demand for the "Pharmacopeia" thus engendered be devoted to improving that work by means of original investigation and other methods that may be suggested.

PRACTICAL NOTES.

Turpentine in Mumps.—A note from the *Massachusetts Medical Journal* states that in usual doses, according to patient's age, turpentine is a specific against mumps. Recoveries are quick and without metastasis.

Leeches for Influenza.—Great relief has been obtained in severe coryza by applying a couple of leeches to the nasal septum, after disinfection, protecting the nose with a cotton tampon inserted on each side. The wound made by the leeches is painted with collodion. D'Aiuto, who suggests the treatment, adds that it should be restricted to elderly people and extreme cases.—*Therap. Woch.*, August 1.

Dosage of Colchicum in Gout.—Professor Schultz announces that the failures in colchicum in gout are due to errors in the dosage, and he announces as the result of considerable research that the best formula is the tincture of colchicum seeds diluted with alcohol 1–10, of which 20 to 40 drops are taken during the day.—*Semaine Méd.*, August 18.

The Menthol Pencil for Insect Bites.—Immediate relief is experienced from the bite of an insect, mosquito, etc., if the spot is rubbed with an ordinary menthol pencil or, better still, painted with a solution of menthol in sulph. ether, 1 to 10 or 1 to 5.—From *Corr. Bl. f. Schw. Aerzte* No. 14, in *Therap. Woch.*, August 1.

How to Prevent Intolerance of Martial Medication.—Iron is well tolerated by the stomach when the secretion of hydrochloric acid is normal or below normal. The intolerance only occurs when there is excessive secretion. This can be remedied by appropriate alimentation or alkalines, and then the iron can be administered to advantage.—N. Buzdygan, *Semaine Méd.*, August 18.

The Success of Salol in Generalized Scleroderma is announced by A. Philippson in the *Deutsche Med. Woch.* of August 12, although he has only two cases to report. But the improvement in both was marked and permanent from the start. The puritis ceased at once and the skin regained its suppleness and the members their flexibility in eighteen months in the first, a very severe case, and a little later in the other, a woman of 69. The dose in the first case (a young man) was 3 to 4 grams a day, in the other 1.5 to 2 grams. No inconveniences were observed from its prolonged use. Massage and gymnastics were ordered as indicated.

Differentiation of Epithelioma and Syphilitic Chancre of the Lip.—Chancres of the lower lip and chin sometimes acquire such dimensions that they are mistaken for epithelioma, but the surface is more regular; the edges do not project and turn over; the blood exudes through numbers of infinitesimal openings without the free hemorrhage of an epithelioma; the progress of the lesion is much more rapid and the satellite adenopathy appears by the close of the first week, and the secondary eruptions toward the end of the first month.—*Gaz. M. de Liège* from *Jour. de M. et de C. Prov.*, June 10.

Whooping Cough Treated with Sulphate of Quinin, Resorcin and Sugar.—Dr. Leuriaux of Brussels recently communicated to the Paris Acad. de Méd., his success with insufflation of a powder composed of these substances which he considers an absolute specific. He reported twenty-six observations in detail, and stated that he had been observing its action in more than 200 cases. He ascribes the disease to an infective nasopharyngeal catarrh, which can be checked by the insufflations, while the tracheobronchic troubles are merely ulterior complications—*Bulletin*, August 3.

Dyspeptic Albuminuria.—Robin ascribes this trouble to the passage of undigested albumin into the urine, where it acts as a foreign substance. It is readily curable at first, when it is only intermittent, but after the chronic stage has arrived the proportion of cures is only 30 to 35 per cent. The treatment consists in merely regulating the diet, adapting it to each case as the albumin is found to increase or decrease with a vegetable, animal or mixed diet. A strictly milk diet is indicated for many patients, suspended if they begin to lose in weight.—*Bulletin de l' Acad. de Méd.*, August 17.

Success of Argonin in Gonorrhea.—Basing his assertions on the effects obtained in thirty-three cases of more or less chronic gonorrhea, none recent, Zydlovitsch recommends argonin as superior to all other medication for this purpose. It causes the rapid disappearance of the gonococci; does not aggravate the pathologic process, but attenuates it. It should be continued until no gonococci are discovered in the course of three to five examinations at three day intervals. The argonin is injected into the anterior portion of the urethra in a 3 to 200 solution five times a day, and retained five minutes. The posterior portion is treated with a 2.5 to 100 solution instilled. The consecutive catarrh with astringents.—*Gaz. Méd. de Liège*, August 5.

Jonnesco's Method of Nephropexy is described and illustrated in his new journal, the *Revista de Chirurgie*, published at Bucharest (No. 4). After an incision parallel to the twelfth rib or if too short the eleventh, the kidney is brought up to the wound. The adipose capsule is detached and turned back from the entire outer side of the kidney, which is then fastened to the rib by three double silk threads, or better still by two U-shaped pieces of silver wire, each end inserted separately with an Emmett needle passing through the skin, through the M. sacrolumbaris, the lower aponeurosis, and through the fibrous capsule on the rear side of the kidney, through the renal parenchyma 1.5 c.m. from the outer side of the organ, then through the fibrous capsule on the other surface through the periosteum of the twelfth rib and finally out again through all the layers, 3 cm. beyond the wound. The ends of the threads are tied over a long roll of sterile gauze on each side of the wound, and the organ is thus fastened to the rib at each end and in the middle, with the ureter in its normal position. He has performed this operation ten times on patients and many times experimentally. He is careful to keep his patient in bed twenty days, and removes all the threads or wires the tenth day, thus obviating all the inconveniences of permanent threads. The adhesions between the decorticated parenchymatous surface, the rib and the muscular tissues, form a remarkably firm support, and "all the disadvantages of other methods are absent."

Quinin Treatment of Meniere's Disease.—The sulphate of quinin is the specific for this annoying affection, but the technique of its administration is all important, Gilles de la Tourette states in a six page article on the subject in the *Semaine Méd.*, of August 18. He does not hesitate to send his patient to a sanitarium if he thinks his instructions will not be carried out to the letter at home. After consulting with a specialist, a plug of cerumen may prove the cause of the trouble—and if there is no acute affection of the tympanum, he proscribes all local treatment or intervention, and institutes a preparatory system of alimentation consisting chiefly of milk, for the week previous, after which the milk is dropped, as the sulphate of quinin coagulates it. The dose is important and should be carefully studied, varying from one-half to one gram (usually 0.75 gram) per day, divided into 3 or 4 doses, taken between meals, with a certain amount of water to prevent injury to the stomach. This course should be followed faithfully for fifteen days, warning the patient that his symptoms will grow worse at first, confining him probably to his bed. In some cases one course is sufficient to effect a complete cure, but a second course is required in most cases, and occasionally a third. An interval of two weeks should be allowed between the first and second, and of a month or two between the second and third. Perseverance is the *sin qua non* of success and the cases cured with one course require supervision for a long while afterward, so as to commence the following course promptly when indicated by a recurrence of the troubles. If there is intolerance of the quinin, it can be administered per rectum, 0.30 to 0.40, in an emulsion with the yolk of an egg, night and morning. This method is uncertain; if it fails the only recourse is to salicylate of soda, 2 to 4 grams a day for two weeks as above. The quinin acts upon the hyperexcitability of the labyrinth, which is the source of the trouble, but it has no effect upon sclerosis of the tympanum or anchylosis of the ossicles. Consequently if there is deafness from this cause, this treatment will not cure it. The general belief that quinin will cause deafness he considers, with Charcot, absolutely unfounded, and cites patients who claimed their hearing was improved by the quinin treatment.

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SATURDAY, SEPTEMBER 18, 1897.

EVIDENCE WHICH TENDS TO WEAKEN THE VALUE OF WIDAL'S TYPHOID AGGLUTINATION REACTION.

To one who listened to the recent elaborate and very valuable discussion upon sero-diagnosis in typhoid fever at the last meeting of the ASSOCIATION, the testimony upon the value of this test seemed far from convincing. The discussion was carried on by some of the most prominent bacteriologists in America and dwelt in considerable detail upon many features of the WIDAL reaction. Still there was a diversity of opinion upon many essential features, and even after the report of the special committee appointed by the Chairman to harmonize the views expressed, there was still elements of uncertainty about the matter.

A great deal was said about the importance of the technique to be employed in making the WIDAL serum test, and still there was scarcely a single point in the methods in which two observers agreed. Opinion differed as to the source of the serum, whether it should be from blood, from blisters, or whether dried blood should be employed; though the reaction was obtained by serum from any of these sources. The dilution of the serum was another point upon which opinions varied, and this held true for the source, age and virulence of the typhoid culture; for the dilution of the bacterial emulsion, and for the proportion of emulsion and serum. Then came the question of the agglutination reaction. What should be considered a reaction? How far should loss of motility and agglutination proper be given value? What should be considered the time limit of a reaction?

The single point upon which an almost unanimous opinion was obtained was with reference to the clinical value of the WIDAL reaction as a sign of typhoid fever.

The diversity of views expressed by these representative American scientists is only a repetition of the opinions of observers in all parts of the world who have discussed this question, and while these discussions, especially when conducted as systematically as the one at Philadelphia, will soon enable us to decide upon the merits of the case; they all seem to foreshadow a disappointment for those enthusiasts who failed to exercise a due conservatism in forming their judgment upon the value of the WIDAL test. Even from the clinical standpoint there can scarcely be a doubt that the reaction has occasionally failed to appear when the blood of a typhoid fever patient has been used; and, on the other hand, the reaction has occasionally been obtained in a variety of other diseases. How far these results have been due to faulty technique is impossible to say, especially when it is so hard to decide upon what is to be regarded as *the correct technique*.

It is well known among bacteriologists that there is a close biologic relationship between the colon bacillus and the bacillus of typhoid fever; so close indeed is this relationship that many bacteriologists have come to regard the common bacillus of the intestine and the bacillus of typhoid fever as varieties of the same species. This view has been advanced from time to time, and is again strongly suggested in the elaborate studies by ADELAIDE PECKHAM (*The Journal of Experimental Medicine*, Vol. II, No. V, 1897). Among other interesting and valuable studies upon these bacilli, this author has tested a large number of colon and typhoid bacilli from various sources as to their reaction with typhoid blood serum. A considerable number of cultures of what were regarded as typical typhoid bacilli failed to give a characteristic reaction, while at least two out of nineteen typical cultures of B. coli responded perfectly to the serum test. These results are quite in accord with all the other so called specific methods for the differentiation of the typhoid and colon group of bacteria, and they would seem to be a serious blow to the WIDAL tests, for upon the specificity of the reaction hinges much of its value in clinical diagnosis. If the colon bacillus will respond to the agglutination effect of serum from typhoid patients, why will not the typhoid bacillus be agglutinated by the blood serum from colon bacillus infections? We believe this will be found to be the case, and in support of this opinion we have succeeded in abtaining a typical agglutination reaction with typhoid cultures in five out of seven cases of suppurative appendicitis by using the dried blood after the directions of JOHNSTON. In three out of the five positive cases a bacillus corresponding perfectly to the colon type was alone isolated from

the pus obtained at operation. The other cases had already been operated upon and no analysis of the pus was made. Such results seem suggestive to say the least, and they should be followed up.

Another curious feature about the agglutination of the typhoid bacillus has just been brought out by the experiments of MALVOZ (*Annales de l'Institut Pasteur*, Tome XL, No. 7, 1897), who has succeeded in producing a reaction with typhoid bacilli, similar to that produced by typhoid serum, by various chemic substances. He mentions especially formaldehyde, corrosive sublimate, peroxid of hydrogen, and strong alcohol. Among the anilin colors, crysoidin, vesuvin, and safranin have the property of provoking a perfect agglutination even in very dilute solutions. MALVOZ attempts to use this agglutinative action of chemicals for the differentiation of colon and typhoid bacilli, and appears to find a considerable difference in the behavior of these two types. On this point, however, judgment must be cautiously withheld, for in the failure of so many other differential tests it is improbable that this one of agglutination by chemic reagents will prove specific. As to the significance of these experiments in explaining the *modus operandi* of the agglutination reaction no opinion can at present be formed, and this is equally true as regards their bearing upon the clinical side of WIDAL'S test.

OPIUM COMA OR MENINGEAL TUBERCULOSIS.

In a recent article on possible medico-legal relations of miliary tuberculosis, Dr. F. P. WEBER of London, England, reports the following case:[1]

A 19 year old man was brought to the hospital under Dr. WEBER'S charge, suffering from febrile delirium. He could answer no questions and there was no history obtainable. The physical signs were not quite the same over both pulmonary apices, which caused meningeal tuberculosis to be suspected. There was, however, much albuminuria, a condition not usually associated with meningeal tuberculosis and further, neither the results of ophthalmoscopic examination nor special nervous symptoms were available. It was therefore possible that the patient had taken poison acting on the kidneys and nervous system. He died some days later. The postmortem examination cleared up the diagnosis. There were also tubercles in the lungs, and miliary tuberculosis of the mucous membrane of the glottis. The kidney affection present was parenchymatous and probably due to the bacillary toxins which had to be excreted. Dr. WEBER remarks that cases of meningeal tuberculosis in adults are probably not rare, in which, if there were absence of past history, temporary suspicion of poison or foul play might be entertained. In the forgoing case the absence of past history and the presence of much albumin in the urine led to doubt in the diagnosis. In such cases the doubtful points are cleared up by post-mortem examination.

Some ten years ago, in a paper read before the Chicago Medical Society[2] Dr. W. T. BELFIELD called attention to the like forensic aspects of meningeal tuberculosis. He pointed out that, given a case of coma preceded by vomiting and headache, occurring in a person of hitherto seemingly perfect health, having a suspicious abdominal enlargement, the possibility of an insidious meningeal tuberculosis should always be considered. In this paper Dr. BELFIELD pointed out that clinicians had frequently noticed the proteiform symptoms of meningeal tuberculosis. BRISTOWE, for example, had remarked that: "No disease is more protean in its features and probably none simulates so many other disorders. In some cases, indeed, even when the brain inflammation is uncomplicated, drowsiness and coma are the only symptoms ever recognized. In many cases the early stage of the disease is mistaken for inebriation." S. WILKS had reported several cases in which meningeal tuberculosis in adults had every obscure early symptom and mimicked the symptoms of opium poisoning. S. J. GEE reported several cases in which meningeal tuberculosis mimicked every variety of neurosis from simple hysteria down. ROSS calls attention to the obscurity of the early symptoms of meningeal tuberculosis. HUGUENIN says that "often the differential diagnosis can not be made in the beginning between congestive cerebral hyperemia (essentially the condition produced by opium) and meningeal tuberculosis. If the individual be relatively healthy precedent to the breaking out of the meningitis, a prodomal period is often wanting in carefully observed cases and the disease begins with head symptoms in the midst of apparently good health.

Dr. BELFIELD'S own case was that of a girl about 20 years old who had always had excellent health. Three sisters are still living, and neither they, the parents, nor any of the relatives, so far as known, have ever shown symptoms of tuberculosis. The present generation are examples of perfect health and this girl was in many respects seemingly the healthiest of the lot. Until five days before her death her health was as usual; then one evening she complained of feeling ill, her head ached; she vomited without apparent cause. She lay down, drank a cup of tea, and was all right. The same thing happened the next day and she complained of extreme headache. On the third day, with the exception of severe headache and seemingly causeless vomiting, she remained in her usual health. The evening before her death she was at the theater and came home about eleven o'clock, going to bed with one of her sisters. During the night the sister was several times awakened by the extraordinary breathing of the patient, which was very hard and

[1] Lancet, Aug. 7, 1897.

[2] Western Medical Reporter, February, 1887.

loud. She shook her and the abnormal breathing ceased. In the morning it was found impossible to awaken her. She was breathing very deeply and slowly and could not be roused. Physicians were summoned, all of whom pronounced it a case of opium poisoning. The symptoms observed were stertorous breathing sometimes as slow as four or five per minute, contracted pupils, a suggestion of strabismus, and a rather warm surface. The pulse was remarkably good (about 80), similar to the pulse of a healthy person; the skin was not moist and clammy. The usual measures for opium poisoning were adopted. Mustard was given at once and as soon as a tube could be procured the stomach was pumped out. Minute doses of atropin were injected hypodermically, the patient receiving about a fortieth of a grain in three injections. The breathing improved very much after these injections, coming up to twelve and fifteen per minute, the pulse also quickened but suddenly the pulse flickered and went out and breathing stopped. On the following day Drs. KROST and BELFIELD made a post-mortem examination of the head and abdomen. The brain was not hyperemic, there was no venous congestion; the pupils were widely dilated; the membranes of the brain were adherent to the brain substance and on stripping close they were found on close examination to be studded with numerous miliary tubercles. On opening the abdominal cavity the intestines bulged out and their surface was thickly studded with miliary tubercles. There was extreme tuberculosis of the peritoneum. The mesenteric glands were large and cheesy. The right ovary contained a rupture cyst about as large as a fist. That the rupture was antemortem was evident from the fact that the inner surface of the cyst was intensely congested and there was a good deal of coagulated blood in its cavity. Dr. BELFIELD points out that when it is remembered that the pulse was natural, that the surface was not cool and clammy and that their was a tendency to strabismus it becomes evident that death resulted from the tuberculosis, aided perhaps by rupture of the cyst. No opium could be discovered anywhere around. The patient's general disposition and circumstance were such as to forbid the presumption by her friends that she could have taken poison.

The case seems to have been another instance of sudden coma incident to tubercular meningitis. It is of extreme interest as showing how insidious a course miliary tuberculosis of the serous membranes may take. The only abnormal features known to her family was an unusual fulness and hardness of the abdomen developed during the last year of her life. The symptoms hinting at possible tuberculosis were the peculiar breathing (which resembles that described by TROUSSEAU as characteristic of tuberculosis), and the strabismus on which BRISTOWE lays stress. At the same time it must be remembered that these symptoms exceptionally complicate opium coma. Meningeal tuberculosis in adults is generally secondary to abdominal tuberculosis and of this there is decided evidence in the peculiar abdominal enlargement observed by the friends long precedent to death.

Bacteriologic tests are certainly of value in these cases, but absence of bacilli does not demonstrate beyond a doubt the absence of tuberculosis, especially since these cases are often ambulant and frequently do not come under observation under circumstances admitting of methods of bacteriologic diagnosis being employed. This was significantly illustrated by the case reported by Dr. BELFIELD. In view of possible medico-legal complications it is well therefore for the practitioner called to a case of seeming opium poisoning without a clear history, to bear in mind the possibility of meningeal tuberculosis. As Dr. WEBER indicates, the ptomain of the bacillus tuberculosis plays no small part in determining the symptoms mimicking opium coma. In all probability it is assisted in playing this role by the sudden occurrence of renal inadequacy.

THE ANTITOXIC PROPERTIES OF BILE.

That bile, as secreted by the liver, is not essential to life, is shown by a number of facts, such as obstruction or obliteration of the biliary passages, excision of the liver, biliary fistulæ, etc. Whether under these circumstances the functions of the bile are replaced or compensated for by the activity of some other organ or organs, is not known. It has been thought that suppression of the biliary secretion results in two groups of symptoms: Those of cholemia, arising from the retention of bile in the liver and its resorption into the blood; and those of acholia, arising from the absence of bile from the intestinal tract. These symptoms will be the more pronounced in accordance with the abruptness of their onset and it is possible, under certain conditions, that they may lead to a fatal issue. Gradually induced, however, the system seems capable of adapting itself to the new order of things, and the disturbance of function may be slight and inconspicuous. Permanent retention of bile will of course be attended with chronic jaundice.

Of late years the opinion has gained ground that the bile plays only a subordinate part in the process of intestinal digestion, being rather accessory to the functions of the pancreatic juice. It aids especially in the emulsification and saponification of fats, and through its alkalinity favors the passage of the products of these processes into the vessels. It possesses, further, some degree of antiputrefactive power, as well as peristaltic activity. That it may have besides other and not less important functions, such as rendering innocuous toxic substances that gain entrance into the gastro-intestinal tract, would seem indicated by some observations made by FRASER (*British Medical*

Journal, July 17, 1897, p. 125) in the course of investigations into the means by which the toxic activity of the venom of poisonous snakes may be neutralized. The liver has always been looked upon as the filter or gateway through which must pass poisons and other substances introduced into the stomach and bowels, and it may be developed that its usefulness in the direction of neutralizing the deleterious effects of such substances may be shared by the product of its activity, the bile.

It is well known that serpents' venom and toxins of various sorts introduced into the stomach of both lower animals and man do not give rise to the profound toxic effects that follow their injection beneath the skin. This peculiarity may be due either to the chemic activity of the gastric and intestinal secretions, or to failure of absorption. It is appreciated that the toxicity of the substances named is not materially diminished by gastric digestion; further, absorption from the stomach is very slow. That absorption from the intestine is unattended with symptoms of intoxication may be due to the chemic or physiologic action of some substance or substances present in the intestinal canal, most probably the bile or the pancreatic juice. As the result of an inquiry into this aspect of the subject FRASER found that the bile was capable of exercising a profound neutralizing influence upon several varieties of venom. The experiments consisted in mixing the bile of a venomous serpent with a lethal dose of venom and injecting the mixture beneath the skin of an animal. When the admixture of bile was sufficient, death did not take place. Similar results were secured with the bile of non-venomous serpents, although they were not equally pronounced. It would thus appear that the bile possesses distinct antitoxic powers.

Various facts tend to show that innocuous as well as venomous serpents possess poison-glands and secrete venom, but the former are innocuous because they are not normally supplied with weapons of offense in the form of poison-fangs. Most probably, therefore, the relative protection against the toxic action of venom introduced into the circulation, which is common to all serpents, is dependent upon an effect due to the venom secreted, in the case of the innocuous serpents only in relatively small quantity. In conformity with this fact, a larger quantity of bile from the latter was necessary to prevent death from injections of venom. The bile of oxen, rabbits and guinea pigs possesses a similar influence, though milder in degree. This difference in potency, it is thought, must be dependent, at least in part, upon some specific constituent or constituents present in different quantities in the bile of different animals. In the hope of isolating these, the bile of a venomous snake was treated with alcohol and the substances soluble in this separated from those insoluble. To the latter water was added and the resulting solution centrifugated and evaporated to dryness over sulphuric acid in the vacuum of an air pump. The alcoholic solution also was dried, at first over a water bath at a temperature of 100 degrees F., and afterward *in vacuo* over sulphuric acid. The product obtained by the second procedure proved incapable of preventing death from lethal doses of venom, while that obtained from the watery solution exhibited distinct antitoxic powers. It is thus shown that the antitoxic properties of bile reside in substances soluble in water.

Although bile in the alimentary canal is non-toxic, it is quite otherwise when introduced beneath the skin or directly into the circulation, and the deleterious effects would be all the more pronounced if such a quantity were injected as would be necessary to neutralize the influence of venom previously injected. The isolation of the antidotal principle or principles, however, makes it possible under such conditions to employ a sufficient dose without evil results.

FRASER notes the interesting fact that bile enters into the composition of the medicines most trusted in for the treatment of snake bite by the natives of Africa, both by topical application and by internal administration.

As has been stated, other toxins introduced into the stomach also are inert, and it may be, as with serpents' venom, that this effect is due to the influence of the bile. Further, the same influence may be responsible for the prevention of various forms of auto-intoxication through the gastro-intestinal tract.

THE STUDY OF ALCOHOL.

It will be new to our readers to learn that alcohol in all its many aspects is receiving unusual attention this year from scientists and medical men. The congress at Moscow has set apart a section on alcoholism, and the advance program announces six papers and discussions on various phases of this topic. A distinct congress called the International Congress Against the Abuse of Alcohol, meets at Brussels, Belgium, in September next, for the fifth annual meeting. This gathering includes a large number of eminent medical men, and also philanthropists, who discuss this subject in a very scientific business-like way, without much sentiment or theory. The French Academy of Medicine and the Chamber of Deputies have taken up the subject, and many papers and discussions have been offered which have occupied a great deal of time. All the secular papers and medical journals have, and are yet discussing the causes and remedies of the increasing alcoholism and pauperism of the country. Studies of alcohol on the body in health and disease have already begun, and papers are appearing in nearly all continental Europe condemning alcohol and showing its evil effects. The medical society of the Rhine Provinces recently took

up the use of alcohol in medicine and passed strong resolutions against its use except under certain special conditions. In Russia, Sweden and Norway, medical societies have taken the same position and are agitating the subject in statistical papers and discussions.

In England a bill is before Parliament giving greater powers of control over inebriates, and the leading journals, both secular and medical, publish very strong radical articles on this subject. The two medical societies, one devoted to the action of alcohol in medicine and on the body, and the other to the study and care of inebriates, are becoming larger and more popular and their papers and publications are increasing yearly.

In this country two similar societies exist, one the association for the study and cure of inebriates (the first society of medical men ever formed to study this subject), the other the medical temperance association, are bringing the questions concerning alcohol and the inebriate to the attention of physicians everywhere. As an evidence of the great interest being created in this subject *Appleton's Science Monthly* has published five long papers so far this year on alcohol and the inebriate. For years the annual meeting of our ASSOCIATION has brought out many papers on these topics, which have been accepted as scientific and valuable. In this there is no reference to the armies of temperance and philanthropic persons who urge a continual crusade against all use of spirits. This is only an outline of the medical work and efforts to ascertain the real facts. The question is to reexamine the entire subject of alcohol and the inebriate in the new light of science, and above the levels of theory and opinion. This is the province of physicians in their various fields of practice. The laboratories may show how spirits act on animals and on the general functional and organic activities of the body, but the practitioner must put these questions to their final test.

It is a source of pleasure to note that medical men in this country lead all the world in the study of the inebriate. American laboratory studies of alcohol are still behind the French and German work. During the past year several very prominent experimental studies have appeared and the hope is expressed that more will follow. An effort is being made to endow a chair of experimental work in this field alone in an Eastern university. This will succeed after a time and we shall expect to find American physicians in the front on all lines of this new and most important field of study.

CORRESPONDENCE.

Blood-letting.

SAN FRANCISCO, CAL., Sept. 10, 1897.

To the Editor:—I am led by the excellent paper of Dr. J. W. Hoff on "Blood-letting as a Therapeutic Remedy," in the JOURNAL of August 28, to add some experiences that I have had with the lancet. I will premise by saying that my father was a student of Dr. Benjamin Rush of the University of Pennsylvania, class of 1809, and an advocate for the free use of blood-letting, then thought so essential in the sthenic diseases of the West. When preparing myself for the study of medicine I bled for him very often. But after the epidemic of cholera in 1833 he said the type of diseases was so changed that his patients did not bear the loss of blood as before, an opinion I have since found expressed in the valuable work on the practice of medicine, by Sir Thomas Watson. My father consequently rarely bled. Following his example, lancets rusted in my pockets, and for a long time a doctor who had lost a patient after venesection (and who of us has not read the harsh censure of Dr. Craik for its use in the case of General Washington?) would have been tabooed as an old fogy, if not dealt with more energetically.

I lived in one of the best mining districts of California the first two years after the discovery of gold. Only in the rainy season could the miners get water to wash the dirt they had thrown up in the dry season on the banks of the gulches. This water was as cold as ice and snow could make it and the men, a hardy set who lived on coarse food, were of full plethoric habits, suffered much from acute inflammatory rheumatism. Bear in mind this was nearly fifty years ago, and I hope your readers will not be shocked when I tell them that my custom was to set these tough fellows up in bed, when the violence of the attack did not preclude the possibility of doing so, open a vein and bleed almost to syncope; then, after free catharsis, give from two to four drams of nit. potassa in flax tea or gruel for a drink every twenty-four hours, a practice that gave me entire satisfaction, as not a single case, as far as my knowledge went, ever suffered subsequently from heart complications, although such were rife among them from other causes, as lifting boulders, sluice boxes, etc.

I will only mention two comparatively recent cases of recovery after blood-letting. I was called to see a 13-year-old son of Mrs. H., an intelligent German woman, who had been aroused at 3 o'clock A.M. by the harsh croupy cough of the boy. She put him in a hot bath and with the co. syr. squills, soon had him breathing easily, but in an hour the harsh croupy cough and dyspnea returned. She repeated the bath and medicine with a like result, followed in an hour or two as before. When I saw him at 7 A.M. he was unable to lie down, had a hard metallic cough and an anxious cyanosed expression of face. The treatment was supplemented by calomel, nauseants, bromids and counter-irritants with no apparent benefit. As a resort dernier I bled him, and before I had drawn a half a pint of blood he lay down, the symptoms all subsided, and he made a good recovery. Not long after that I was requested by Dr. S. to see with him Mrs. P., a primipara, the young wife of Dr. P., a former pupil of his. This was at 8 P.M. At midnight, twenty hours before, upon the termination of labor she went into convulsions and Dr. S. was called. He gave chloroform, chloral and morphia, but the convulsions went on every half hour. He sent for his partner and during the next day six others —all of our leading physicians—saw her, each advising "a little more grape, Captain Bragg." When I examined this moribund woman there were five of us present, one of whom gave a positive dissent when proposed venesection, but being overruled it was agreed that if I would perform the operation it might be done, as everything else had been tried upon the hypothesis of epileptic eclampsia. The lady's family were homeopathists, and it looked like taking desperate chances when I took the responsibility and opened a vein in the right arm, being careful to keep my fingers on the left radial artery. Before I had drawn a pint of blood the stertorous breathing stopped, the hard pulse softened, the cyanosed lips and nails

blanched and there was not another convulsion. A speedy recovery followed a large enema of oil and turpentine, and I had the pleasure of receiving a most grateful letter from her husband, Dr. P., in which he said the bleeding saved her life. It is to be regretted that a remedy so potent for good, when judiciously used, should have gone into, I will not say "*innocuous* desuetude." Men like Sir Thomas Watson and students of the great father of American medicine, did not mean to discard it, but honestly drew the attention of the profession to those changed conditions which called for care in its use; but extremists, liked Bennett, would have none of it in any case. A careful study of this writer, long ago convinced me that in the cases he reported in which he had bled with bad results, he showed almost a culpable ignorance of the conditions which would justify the use of the remedy, and the same want of discrimination has led many to fall into line with him.

It will be sixty years next March since I began the practice of medicine, and within that time I have heard and read almost every old standard remedy condemned by respectable graduates of our medical schools; one would not bleed under any circumstances; another would never blister; another would not give calomel; another would never give an emetic except in a case of poisoning, and recently one of our ablest physicians decried the use of opiates, and so on. Wishing not to be uncharitable, I believe that in each case the fault lay in the limited knowledge of the widest therapeutic range of the respective remedy condemned, together with a slavish following of text-books, when their diagnosis had been made without due consideration of age, temperament, habits of life or stage of disease; and has not the search after specifics for the last twenty years had something to do with the neglect of our old armamentarium?

F. WALTON TODD, M.D.

Improved Method of Cocain Anesthesia.

DALLAS, TEXAS, Sept. 4, 1897.

To the Editor:—With the permission of Drs. Anderson and Oaks, I would like to add something in reference to the "Improved Method of Cocain Anesthesia" by Dr. P. L. Anderson. This is not in the nature of criticism, but simply to add my experience to theirs.

In 1890 it seemed to be the practice to use a 4 per cent. solution of cocain with a spray for this purpose, but I did not adhere to this, for I soon found that the toxic effects of the drug were alarming and began applying it by means of cotton wrapped on a cotton carrier. I did not at this time (1891) use the preliminary spray, but gradually increased the strength of the solution of cocain until finally a saturated solution was used. From this mode of application I did not notice any special toxic effect, except in very susceptible patients; in fact, it was so much less than previously that I thought I had an ideal method. Of course my previous experience taught me that its effects at times were very unhappy, and I used great caution in its application. The inexperienced should first be acquainted with the toxic effects of the drug. The word "caution" to a careful observer is the same as a green flag or a green lantern to a careful locomotive engineer—it means caution. I am inclined toward the belief that Dr. Oaks' grave apprehensions are not well founded, because there is no recent graduate of today, or even inexperienced physician, unless he is not abreast of the times, who is not acquainted and does not know that cocain is dangerous. To them it is only necessary to say a word of caution.

The saturated solution is prepared as follows: A small portion of cotton placed upon the end of a probe is saturated with water, the excess being wiped off; crystals of cocain placed in a watch-glass, or on the bottom of a medicine glass, are then rubbed up with the wet cotton, which is allowed to take up the cocain to its fine capacity. It is applied to the part to be operated upon by rubbing it against it until the patient decides that the part is perfectly insensible. If the nose pours out an abundance of mucus, this procedure must be repeated, rarely three times, which usually produced toxic effects by the secretion spreading over a greater surface. The flow of mucus prevents rapid absorption at the point desired, probably by diluting the drug. This mode of application is about the same as that advocated by Dr. Anderson, except he used 25 and 50 per cent. solution, while I used the saturated. In this way I got an absolutely fresh, as well as a saturated solution. This mode of preparing the solution was done for two reasons: 1, to get a fresh solution; 2, to do away with the necessity of throwing the cotton away if a repetition of the procedure was necessary, which in a very strong solution was considerable waste. At the end of a year or so this proceeding was partially abandoned, not because of toxic effect or insufficiency, but because it was too much trouble, and there was always more or less reaction following the slight injury to the membrane. In its place I began the preliminary use of a spray of 1.5 per cent. solution in 4 per cent. solution boric acid and applied pledgets of cotton saturated in a solution of 6 per cent. strength, which I still use with great satisfaction. I do not use the preliminary spray because it has any special advantage in producing anesthesia of the mucous membrane of the nose in a surgical sense, but because it reduces turgescence and swelling of the membrane; besides, depleting the erectile tissue slightly reduces its sensibility, and this enlarges the nasal passages and allows the cotton pledgets to be passed easily and almost painlessly. It also checks the flow of mucus, which flow greatly interferes with any method of application.

Saturate the cotton and squeeze out the excess by rolling it hard against the mouth of the bottle, and place it against the part to be operated upon, allowing it to remain there while otherwise preparing for the operation. If it is to be a chromic acid application the patient is ready by the time or before the acid is prepared on the applicator. This latter preparation attracts the patient's attention and he usually forgets about the cocain application.

This method of application has been eminently satisfactory in my hands, seldom getting the toxic effect of the drug; more often, however, I get the effect of mental dread upon the patient as he apprehends the operation; which, by the way, appears to be a peculiar idiosyncrasy of men, women succumbing much less often and recuperating more rapidly; a woman will faint much more quickly if witnessing the operation performed upon some one else. I attribute this difference to the fact that women acquire the habit and are taught to endure much more pain and mental strain than men. Her pride, prompted by her sense of humiliation, stimulates her to the position of self control, which is truly remarkable. It would appear that if this effect is the result of cocain poisoning, men and women would be affected alike.

I still occasionally use the method I formerly used, and that advocated by Dr. Anderson, in anesthetizing the septum, and occasionally the turbinated bones. The time necessary for anesthesia is from three to eight minutes. I more often operate under than over five minutes. In the preliminary step any good spray apparatus is sufficient (I use a spray and instantaneous cut-off devised by myself). A continuous spray for two seconds duration in the anterior nares is sufficient, the patient being told to immediately incline the head forward and down without blowing his nose, which causes the excess to flow out and is caught on a napkin in the patient's hands. then by the time the pledget of cotton is deliberately prepared the preliminary spraying has been effective, and the patient having cleared out the nostrils, insert the cotton with cocain as desired. I can not agree with Dr. Ingals that from fifteen to twenty minutes are necessary to produce anesthesia suffi-

cient for intranasal operations; indeed, the application must be very imperfectly made when this time is required. My patients complain of pain so very infrequently that I take it as a matter of fact that there will be no pain, and assure the patient so. In galvanocautery operations I seldom reach the fifteen minute mark for the completion of the operation, including the anesthesia. I very seldom have waited as long as fifteen minutes for anesthesia.

I always operate in the sitting posture, unless for special reasons I notice an idiosyncrasy or predisposition to fainting, because it is very much more convenient, the patient being able to expectorate and clear the nose in case of hemorrhage. While fainting and toxic effects are somewhat favored by the upright position, hemorrhage is less.

Dr. Anderson is correct in his statement that patients recover more quickly in the recumbent position, whether from the toxic effect of cocain or fainting. I have been compelled twice to place the patient in the recumbent position after having begun the operation sitting. It is not an easy matter to handle a limp patient under such condition; in fact, without an assistant it is at times quite impossible. This occasional unhappy condition in my opinion argues more than all else in favor of the recumbent posture, but the convenience both to patient and operator is certainly in favor of the sitting position.

Spraying the nose with a solution of cocain strong enough to produce anesthesia sufficiently complete for intranasal operations should be unconditionally and emphatically condemned as an unscientific and dangerous procedure.

The manner, then, of application as between placing pledgets of cotton saturated with a weak solution (6 to 10 per cent.) in the nasal cavity, and the method advocated by Dr. Anderson, and formerly practiced by myself, of a strong solution (25 per cent.) to the saturated solution, I prefer the former method because I have found it much more convenient, saves time and is tolerated better by the patient, without increasing the dangers of the toxic effects of the drug.

HENRY W. WANDLESS, M.D.

On the Excretion of Urea.

TIVERTON, R. I., Sept. 10, 1897.

To the Editor:—On page 438 of the JOURNAL, Aug. 28, 1897, Dr. Charles Stover of Amsterdam, N. Y., is quoted as follows: "He also spoke of a case which came under his own observation, in which but 500 grains of urea were excreted daily when there should have been 1,300, the patient developing eclampsia."

I do not remember having read that pregnancy was a particular cause of increased excretion of urea, but consulting my authorities, quotations from a few enclosed, I learn that the normal excretion of urea is about 1 ounce or 500 grains in health. If the above statement of Dr. Stover is a fact, that she should have excreted 1,300 grains, or 2.15 time the normal amount during health, what cause should this great increase of the excretion of urea in pregnancy be ascribed to? Allow me to quote. Bartley ("Med. Chemistry," 4th Ed., 1895, p. 615): This quantity, multiplied by the number of fluid ounces passed in twenty-four hours, gives the amount of urea excreted in twenty-four hours, which should not be far from 500 grains. A less quantity than 350 grains in an adult, who is eating the usual amount, should be regarded as pathologic and suspicious of nephritis or deficient kidney excretion. Robert ("Urinary and Renal Diseases," 2d Ed., 1872, p. 115): The daily separation of urea, by adult men between the ages of 20 and 40, averages about 500 grains; but the amount varies considerably from various causes, such as diet, exercise, meteorologic conditions and individual peculiarities; of twenty-four observations, of not less than six days each, tabulated by Dr. Parkes, the minimum result is 286.1 grains and the maximum 684.4 grains per day. Marshall ("Outlines of Physiology," Ed. 1868, Lea, p. 777): In man, with an exclusively animal diet, the daily quantity excreted was found by Lehmann to be about 820 grains; with a mixed diet, 500 grains; with a vegetable diet, 347 grains, and with a comparatively non-nitrogenous diet, 237 grains. In the female, from her smaller frame, her less active nutrient metamorphoses and the smaller quantity of food consumed, the daily quantity excreted is about three-fourths of an ounce (360 grains). Proportionately to the weight of the body it is less abundantly found in women. Hare ("Practical Diagnosis," 1896, p. 389): Although the quantity of urea varies very greatly in perfect health, the mean amount excreted in twenty-four hours by a healthy man of 20 to 40 years is about 512 grains; women excrete a little less than men. If, therefore, in a pregnant woman or a person suffering from Bright's disease, analysis shows a constant diminution in the amount of excreted urea, the physician is warned that a uremic convulsion or other manifestation of uremic disorder is imminent.

Nor can I find any reference in the standard works of my library to increased excretion of urea during pregnancy. On the other hand, I find many writers referring to eclampsia from other toxic causes than retained urea. (*Vide*, Professor Palmer, "Am. System of Obstetrics," p. 204, also Professor Lusk in his work.)

E. P. STIMSON, M.D.

Leprosy in Chinese Laundries.

NEW YORK CITY, Sept. 6, 1897.

To the Editor:—The report of Charles F. Roberts, M.D., Sanitary Superintendent of the Board of Health of New York, to the Hon. Chas. G. Wilson, President, regarding the question of the presence or absence of leprosy in the Chinese laundries of this city, contains statements not consistent with the knowledge of the present day. I have nothing to say about the presence of the disease in the Chinese laundries; I may, however, say I do not believe in its existence. So far he is correct. But I object to his statement that "the authorities of the present day entertain the belief that the disease is due to infection not contagion."

I venture to affirm that all able authorities of the whole world, believe in contagiousness, and that it is as contagious in "the four hundred of New York" as in the slums of Cherry Hill. "The best authorities of this country" do not agree with the report of the Medical Society of the County of New York, a report which was gotten up to back its chairman, Health Commissioner George B. Fowler, in his intent to discharge the lepers from North Brother Island. *These lepers have since been let loose.*

As a matter of expediency for the New York Board of Health that report of the New York County Medical Society, and this report on Chinese laundrymen, are of one piece.

ALBERT S. ASHMEAD, M.D.

Reply to Dr. Paquin.

BUFFALO, N. Y., Aug. 26, 1897.

To the Editor:—I desire a little space to reply to an article of Dr. Paul Paquin written in criticism of my report, on treatment of tuberculosis, presented at the last meeting of the AMERICAN MEDICAL ASSOCIATION. Far from belittling the results of serum-therapy and declaring against the use of tubercle antitoxin, I am heartily in favor of such methods of treatment in suitable cases. The conclusions to which I came in regard to antitoxin are, it seems to me, thoroughly justified and are not materially different from Dr. Paquin's own conclusions: viz., that "in cases of phthisis that are at all advanced it is of no value, that in the *one* case (and I particularly state *one*) of almost pure tuberculosis of larynx and upper lobe in which I used it, it was worse than useless, not having stayed

the disease and having produced great physical suffering; that in the case of gland tuberculosis it has apparently done no harm and may yet be of value;" but (here I differ from Dr. Paquin) "that in all cases with the exception of the last, *the pain produced by the injection and the unpleasant after-results in the way of dermatitis and glandular swellings would almost, if indeed not entirely, prohibit its use.*"

The possibility of improvement seems so slight when we consider the pain and suffering produced, especially as we can not definitely promise recovery or even improvement to our patients by the use of this particular serum, that I am not willing to ask patients to undergo the ordeal. So much for Dr. Paquin's criticism of the conclusions to which I have come; as to the more personal matters that he has cared to drag into the question, I have only to say that I was unable to procure any of Maragliano's serum and so could make no comparative test. He implies that I obtained the serum at a reduced rate by making false statements. I reply that I paid full price for the serum as I would not consent to the conditions under which the reduction in price was offered.

As to the slurring reference to my scientific ability, I am perfectly willing to stand on my record among those who know my work. Yours very truly,

DELANCEY ROCHESTER, M.D.

Dr. Paquin's Serum.

ST. LOUIS, Sept. 6, 1897.

To the Editor:—In the JOURNAL of Aug. 21, 1897, Dr. Paul Paquin mentions my name as one of a number of physicians who "used serum and are still using it." There appeared in the *New York Medical Journal*, Sept. 1, 1895, a report by me of a case of tuberculosis, for which I recommended the use of Paquin's anti-tubercle serum. The patient recovered. The report of this case has been used extensively to advertise Dr. Paquin's serum. I made an extensive trial of the serum for some months after the recovery of this patient, but the results were either negative, or they appeared to be similar to those following the use of Koch's old tuberculin. As the serum was injurious and dangerous to my patients, I discontinued its administration. I do not, under any circumstances, wish to be considered as indorsing the Paquin anti-tubercle serum.

Yours very truly, J. R. LEMEN, M.D.

The Use of Goat's Milk.

GROVELAND, MASS., Aug. 10, 1897.

To the Editor:—I should be greatly indebted to any of your readers who would write to me concerning any experience they may have had in the use of goat's milk in the treatment of wasting diseases.

I should also be very glad to receive at the same time professional opinion concerning goat blood serum, as to its antitoxic effect in the treatment of tuberculosis, diphtheria, etc.

Respectfully, WM. THORNTON PARKER, M.D.

ASSOCIATION NEWS.

Section on Surgery and Anatomy.—Minutes of the Section on Surgery and Anatomy at the forty-eighth annual meeting of the AMERICAN MEDICAL ASSOCIATION at Philadelphia, June 1-4, 1897. The Chair appointed as a nominating committee, Drs. DeForest Willard of Philadelphia, H. O. Marcy of Boston, and J. McFadden Gaston of Atlanta. This committee reported as follows: Chairman, Dr. John B. Murphy of Chicago, and Secretary, Dr. William L. Rodman of Louisville. Dr. Murphy having been selected to deliver the "Address on Surgery" next year, resigned the Chairmanship of this Section and it was moved that the nominations to fill the vacancy should be filled by ballot. Carried. The following were then nominated: Dr. Wm. L. Rodman, Louisville; Dr. H. O. Walker, Detroit, and Dr. W. J. Mayo, Rochester, Minn. After three ballots Dr. Rodman was declared elected. The following nominations were then made for Secretary to succeed Dr. Rodman: Drs. Clayton Parkhill of Denver and McLane of Detroit. Dr. McLane withdrawing, Dr. Parkhill was declared unanimously elected. It was moved and seconded that in the future the Nominating Committee shall be continued until the end of the session for which they are appointed to serve. Carried. It was moved and seconded that all papers read by title because their authors failed to read them shall be excluded from the "Transactions," except where such failure to read papers is due to the death of the author or to lack of time on the part of the Section. Not carried. It was moved and seconded that a committee of five should be appointed to consider Dr. Senn's proposition of the previous day and report the next morning. The Chairman appointed Drs. Nicholas Senn of Chicago, G. R. Fowler of Brooklyn, H. Augustus Wilson of Philadelphia, J. McFadden Gaston of Atlanta, and J. D. Griffiths of Kansas City, Mo. Dr. Senn declining to serve, Dr. H. O. Walker of Detroit was added to the Committee. (*Vide* JOURNAL, June 26, July 17, etc., for the Committee's report.) It was moved and seconded that the name of Dr. R. J. Reed of Wheeling, W. Va., should be inserted in the "Transactions" as Secretary *pro tem.* of this meeting instead of Dr. Bayard Holmes' name (owing to Dr. Holmes' absence). Carried. It was moved and seconded that a vote of thanks should be extended to the Chairman of this meeting.

Notice to Secretaries.—In order to enable the officers of the ASSOCIATION to know what societies are in affiliation with the ASSOCIATION, the secretaries of every State medical society are urgently requested to forward to the Permanent Secretary, W. B. Atkinson, M.D., 1400 Pine Street, Philadelphia, as early as possible, a complete list of the local or district societies which are "recognized by representation in the State society."

SOCIETY NEWS.

The Tri-State Medical Society of Alabama, Georgia and Tennessee will hold its ninth annual meeting in Nashville, Tenn., October 12, 13 and 14.

The American Association of Colored Physicians.—The annual session for 1897 will be held in Nashville, Tenn., October 15 and 16. The program offers thirty-five papers by the leading negro physicians throughout the United States.

The Third International Congress of Sociology convened at Paris in July, with Senator Lilienfeld of Russia in the Chair. According to the *Progrès Méd.*, the most important address was delivered by Prof. Lester Ward of Washington, D. C., on the "Economics of Pain and the Economics of Pleasure."

The Medical Society of Virginia held its twentieth annual session at Hot Springs, Va., September 1, 2 and 3. The society was organized by ninety-two physicians, Nov. 2, 1870; of these twenty-seven are still living. The society now has a membership of 854. At the recent meeting prizes were awarded the competitors who had submitted essays on Virginia medical history. An original prize of $450 was awarded to Dr. Jordan of Richmond, while supplementary prizes of $100, $75, $50 and $25 went respectively to Drs. Hugh Cummings, non-resident fellow, of Philadelphia, Hugh M. McGuire of Alexandria, Jessie Ewell of Richmond and W. T. Walker of Lynchburg. George B. Johnston, M.D., president, in his address, contended for State Medical Societies and pointed out their good results to the profession and public. The question of the admission of women as fellows of the society was settled in their favor with little opposition. The following officers were elected: President, Dr. Lewis E. Haine, Danville; first vice-

president, Dr. L. G. Pedigo, Crockett Springs; second vice-president, Dr. A. S. Rixey, Culpeper; third vice-president, Dr. H. F. Cline, Front Royal; recording secretary, Dr. L. B. Edwards, Richmond; treasurer, Dr. R. T. Styll, Petersburg; corresponding secretary, Dr. John F. Winn, Richmond.

The Congress of Hygiene and Climatology for Belgium and the Congo, recently held at Brussels, was principally devoted to the recommendation of hygienic measures already adopted by other countries, and the question of acclimation in the Congo. We note that colonists from the north of Europe, Swedes, Norwegians, etc., are more apt to thrive than Italians, Spaniards, etc. The nervo-sanguine temperament is the most resistant to the climate, and the age between 25 and 35. The best season to arrive is in the dry, cool months of July, August and September. Negroes imported from South America, whose ancestors came from the Congo region, succumbed rapidly to malaria and dysentery, showing that the immunity had not been inherited. The annual mortality among the negroes working on the railroad is now only fifty per thousand, while there was a brief time when, from lack of suitable food and shelter, it rose to 900 per thousand. Bonkowsky Pasha represented Turkey at the Congress. He stated that the Sultan is much interested in hygienic matters, and that although the sanitary arrangements of the Red Sea and in Arabia are not complete, yet they had succeeded in arresting the spread of the plague in two months after it had appeared at Mecca; also that the cholera had not appeared in an epidemic form since 1895. Belgium is the first country to introduce a complete ozonometric service, and further study by similar scientific methods was urged on all countries.—*Gaz. Méd. de Liège*, August 19.

American Electro-Therapeutic Association.—The following papers will be read at the next annual meeting of the American Electro-Therapeutic Association at Harrisburg, Pa., Sept. 21, 22 and 23, 1897: Caleb Brown, Iowa, "Electricity as an Aid in the Treatment of Goiter;" Francis B. Bishop, Washington, D. C., "Chorea;" Lucy Hall Brown, Brooklyn, "A New Electrode for Use with Static Machine;" Eugene R. Corson, Savannah, "Some Thoughts and Suggestions on X-Ray Work;" Margaret A. Cleaves, New York, "Expenditure of Electrical Energy;" Prof. A. E. Dolbear, Boston, "Molecular Effects of Electricity;" William J. Herdman, Ann Arbor, "The Influence of Magnetic Fields on Nutrition;" J. H. Kellogg, Battle Creek, "Electricity as a Means of Involuntary Exercise;" Charles H. Lodor, Chicago, "The Treatment of Urethral Hyperesthesia in the Male;" Robert S. Newton, New York, "What Has Electricity Accomplished in the Treatment of Mental Diseases?" Robert Newman, New York, "Electric Treatment in Gout and Uric Acid Diathesis;" R. J. Nunn, Savannah, "Sources of Atmospheric Electricity;" Curran Pope, Louisville, "The Electro-Therapeutics of Neurasthenia;" F. H. Wallace, Boston, "Ozone in Nasal Catarrh and Pulmonary Diseases;" W. S. Watson, Fishkill-on-Hudson, "Medical Electricity;" L. A. Weigel, Rochester, "Electricity in Orthopedic Practice;" G. B. Massey, Philadelphia, "The New Electro-mercuric Treatment of Cancer;" J. Bergonié, Bordeaux, France, *a*, "A New Electrode, Preventing the Diffusion of the Current;" *b*, "Palliative Electric Treatment of Tic Douloureux of the Face;" *c*, "The Action of the Roentgen Rays on the Vitality and Virulence of Koch's Bacilli in Cultures." There is a good prospect of having a fine exhibit of electric apparatuses and also several social entertainments and receptions.

PUBLIC HEALTH.

Yellow Fever.—In our last issue we referred to the efforts that were being made by National and State authorities to arrest the spread of the epidemic at Ocean Springs and the coast of the Mississippi Sound. We stated (page 552) "the number of cases that is reported makes it probable that even the best directed efforts will not avail to prevent other cases here and there. Prompt isolation of these cases, which will occur this week, if at all, will prevent a further spread."

It now seems that the separate cases which have appeared, with the single exception of New Orleans, were not promptly isolated, and we may well fear that we are on the verge of an extended epidemic. According to the newspapers, on September 6 there have been 600 cases of various kinds of fever at Ocean Springs. There was one case of yellow fever reported at Edwards, Miss. On the 7th there were twenty-two new cases reported, namely, New Orleans five, Scranton sixteen, one refugee died at Louisville; on the 8th three new cases were reported at Biloxi with one death. The actual number of cases of yellow fever at Ocean Springs was then officially declared to be but 20. On the 9th it was stated that there had been a total of 748 cases of yellow fever at Ocean Springs from July 8 to September 9. Nobody, it seems, paid any particular attention to it during July and August and persons went in and out of the Springs as usual. On September 10 there were twelve "suspicious" cases reported at New Orleans and seven new cases at Biloxi. It subsequently appears that on September 13 thirteen cases were reported from Mobile, and it seems that the fears which were entertained the first of last week will unfortunately be realized. It is said that all cases have been attributed to Ocean Springs, with the exception of one case at the City Hospital in Mobile. Four cases were reported at Berkley, and Surgeon Carter gives it as his opinion that there have been ten cases, with four deaths, of yellow fever at Berkley. It thus appears that nearly all the cases have been developed from the original center at Ocean Springs.

In this connection it will be recalled that Congress some years ago directed the removal of the National Quarantine from Ship Island to Chandeleur Island, in order to prevent epidemics of this character, on the recommendation of Surgeon-General Hamilton. On the 13th seven new cases were reported at New Orleans, two cases at Galveston, Texas, and six new cases at Ocean Springs. Isolation, which would have been successful had it been applied early, is thus made extremely difficult of execution. The best hope for the people at this juncture is in immediate depopulation of the non-immune, and their escape to the high country. Atlanta, which has always opened its doors in cases of yellow fever epidemics, will, it is understood, pursue the same course this year. Its elevation, 1,600 feet, is such that it is believed, while yellow fever may exist among those arriving while sick, it is not likely to spread. Chicago opened its doors in 1878; thirty-six cases were treated here and no spread of the disease occurred. It is believed that the nights are too cool in the towns along Lake Michigan for yellow fever. Food for the fever now existing in the South should be removed at the earliest possible date as frost is not likely to occur along the Gulf Coast until November.

P. A. Surgeon Wasdin was reported sick on September 13, and the Texas quarantine at Sabine Pass damaged by a cyclone.

Protection of the Milk Supply by a Local Board of Health.—Minneapolis is one of the small number of cities in which the health authorities have undertaken to prevent the sale of milk from consumptive cows to the people under their jurisdiction, by requiring the dairy farmers who ship milk to the city to prove that their herds have been purified by means of the tuberculin test. One farmer rebelled against this requirement and appealed to the courts upon the ground that the city's board of health had no right to enforce such a regulation with respect to herds kept outside the city limits.

Health in Chicago.—During August the total number of deaths was 1,967 or 1.21 per 1,000, as compared to 1.40 per 1,000 in August, 1896. Of these deaths 755 were persons under 1 year, and 303 between 1 and 5 years old. The principal causes were: Infantile diarrhea, 362; other acute intestinal

diseases, 360; diseases of the nervous system, 207; consumption, 153; diseases of the heart, 97; pneumonia, 66; cancer, 57; diphtheria and membranous croup, 47; typhoid fever, 42; and bronchitis 41 deaths.

The Arbitrary Power of Health Boards receives a handsome apology from Dr. H. M. Biggs of New York, in a paper read before the British Medical Association September 3. He says that "the belief is never aroused in any class of the population, however ignorant, that the institution or enforcement of any sanitary measures is designed for the restriction of the individual freedom. There is nowhere to be found any jealousy or distrust of law and government as such. It is therefore possible to adopt measures more arbitrary in many respects than could be adopted in most other countries, simply because our government is democratic. This is the keynote to the attitude of the sanitary authorities of New York.

NECROLOGY.

JESSE OREN, M.D., at his home in Laporte City, Iowa, August 25, 1897, of diabetes, aged 73 years. He studied medicine under Prof. James Bryan of Jefferson, was graduated from Pennsylvania Medical University in 1854, practiced a short time in Philadelphia, then entered the Russian service and served on the Russian staff as surgeon during the Crimean war. After the war ended he returned to Philadelphia and moved to Iowa in 1856. In 1858 he moved to Laporte City, where he made his home the remainder of his days. Dr. Oren was promoted while in the Russian service to the rank of Major, and was also made a present of twenty-five rubles by Czar Nicholas for excellent services.

J. M. SWIFT, M.D. The death of Dr. J. M. Swift of Northville, Mich., an honorary member of the Wayne County (Mich.) Medical Society was reported at a recent meeting of that Society, and on motion a committee was appointed by the President to draft suitable resolutions in respect for him. They are as follows:

The man who exerts himself to do good and helps to build up the commonwealth deserves the good will of his friends and neighbors while living, and when he has been called to join the great majority, he should be held in pleasant and appreciative memory by all who have known him. Dr. Swift, we know, was held in high esteem, and we, the members of this Society of which he was an honorary member, do here record the fact that we cherish the memory of our departed friend and brother, and

WHEREAS, Our professional brother, Dr. John M. Swift, who after a successful career, has been removed by an all-wise Providence, therefore,

Resolved, That as a co-worker his death is sincerely felt by this society; and

Resolved, That we extend to his relatives and friends our sympathy and condolence; and

Resolved, That a copy of this memoir be spread upon the minutes of our Society and that the same be transmitted to the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, the medical journals of this State, and the *Northville Record*, with the request that they publish the same, and also that a copy be sent to his widow.

Signed: E. B. Smith, David Inglis, J. H. Sanderson, H. C. Wyman.

WILLIAM BRODIE, M.D., born in Philadelphia forty-two years ago, and a graduate of the University of Pennsylvania, died suddenly at Forest Grove, Pa., from nephritis on September 3.

W. H. CRAYNE, M.D., died at Colfax, Washington, August 6, aged 48 years. He was born in Fountain County, Ind., and at the age of nine years moved to Champaign, Ill. He served for one year during the war in a company of Illinois volunteers. He graduated from the St. Louis College of Medicine and Surgery in 1880, and located in Oregon in 1884. He has resided in Colfax, Wash., since 1889.

JOHN ALLEN, M.D., Saco, Maine, September 4, aged 85 years.——Robert M. Pulliam, Richmond, Va., September 5, aged 66 years.——William H. Palmer, M.D., Jackson, Mich., September 6, aged 60 years. During the war he was hospital steward and assistant surgeon of the Ninth Michigan Infantry and was also with the Army of the Cumberland during its operations in Kentucky, Tennessee and Alabama.——Professor Gros of Algiers.——P. v. Stern, physician to Russian Embassy at Berlin.——W. Kremnitz, Bucharest, aged 54 years.——J. Goldenhorn, Odessa, aged 38 years; death from surgical infection.——I. Tschetschichin, known by his works on the heat centers, aged 67 years.

MISCELLANY.

Why Not?—We are gravely informed that Dr. Kitasato of Tokio, Japan, is in charge of laboratories where anti-diphtheria, anti-cholera, typhoid and erysipelas serums are made; also that his institute, connected with the sanitary society of Japan, contains at least the essential requisites for a bacteriologic course and for the practice of microphotography.

Actionable Words.—To render words spoken of and concerning a physician actionable, the supreme court of Indiana states, in the case of Divens v. Meredith, they must be spoken of him in his professional character. It is not enough that the language disparages him generally, or that his general reputation is thereby affected, or that the words used tend to injure him in his profession.

Indications from the Curve of the Agglutinating Power in Typhoid Fever.—If the curve rises abruptly and falls again, resembling the shape of a bell in its course, the typhoid is benign. In severe cases the curve rises slowly and irregularly, and the prognosis is unfavorable if the agglutinating power falls with the temperature.—P. Courmont, *Semaine Méd.*, July 28.

Personal.—Recently appointed by Governor Barnes: L. Haynes Buxton, M. D., of Guthrie, Okla., superintendent of public health and secretary of board; Wilber Hamilton, M.D., of Norman, vice-president of board. Wilson Lockhart, M.D., has been appointed superintendent of the Eastern Washington Hospital for the Insane at Medical Lake, vice Dr. John M. Semple resigned.

The Continuity of Living Matter.—Prof. Rudolph Virchow, at the twelfth International Medical Congress, lately held at Moscow, re-iterated with warmth in an opening address, his views of cellular life. "Life," he said, "has no other origin than from life itself. Life is in the cell. He who speaks of serum as a vital force apart from cells is wrong. The grand truth of cellular succession may be assailed in the future as it has been in the past, but it will never be thrown to earth."

The "Medical Record" and the English.—The *Medical Record* since the Montreal meeting has become pro-English. It has frequently shown its great knowledge of the English people and their customs. In fact, it seems to know everything about the English except their language.

Medical Moscow.—The medical schools and hospitals of Moscow were mostly erected by the generosity of the enormously wealthy wholesale merchant class in that seat of extreme Russianism and devotion to the Church. This fact determines the character of the medical world there, which does not affiliate with the outside world like St. Petersburg. The stately row of clinics, two story palaces with side corridors, extends for a kilometer, and scarcely a year passes without the endowment and erection of some new clinic or hospital. All are heated with hot water, and have electric lights, etc. The number of large and small hospitals is almost endless, although most of them are built on the old-fashioned hospital plan. As many of the professors are connected with the wealthy merchant class,

it is not a rare occurrence for one of them to endow some clinic or hospital, or to erect a sectarian school or even a church in the midst of the college buildings, at his own expense.—From A. Sack's letter in the *Deutsche Med. Woch.*, August 12.

The Bacillus Icteroides.—There is great rejoicing in South America over Sanarelli's announcement of his discovery of Sternberg's specific bacillus of yellow fever. The distinguished Italian bacteriologist presented his report at a special afternoon meeting in the theater of Montevideo, before a brilliant assemblage, including the President of the Republic and delegates from numerous medical and scientific societies all over the country. It was published in full in the daily press, in *O Brazil Médico* and other Spanish and Portuguese as well as Italian journals. The bacillus responds to every bacteriologic test to prove its identity and the experiments in the line of sero-therapy already promise important results.

Discretion with Township Trustee.—The discretion to determine whether or not a sick and indigent person, found within a county in Kansas where such person has no legal settlement, can be safely and properly sent to the county where such settlement exists, the court of appeals of Kansas holds, in Stevens v. Board of Commissioners of Miami County, July 31, 1897, rests with the trustee of the township, as overseer of the poor. Upon this ground, it further holds that the county becomes bound for medical services rendered upon an order of the trustee, or overseer of the poor, in a case in which he has, upon investigation and inquiry,, determined that aid ought to be extended to an indigent person so found within his township.

The Shrinkage of the Birth Rate in France has suggested the Alliance Nationale, of which Dr. Jacques Bertillon is president. The society was organized early during the year and has induced thirty-eight departmental assemblies to request the passage of a law reducing taxation pro rata to the number of children in the family, and that the same be applied to all financial questions in which the government is a party. In addition, where the number of servants exceeds the number of children, the taxpayer is to be subjected to an exceptional surtax, and all favors at the disposal of the state are to be reserved for the members of large families. Another proposition which is receiving considerable attention is that the government should educate and care for all children over six in any family.

Specific Agglutination Reaction Produced in Filtered Cholera, Typhus and Plague Bouillon Cultures by the Addition of Homologous Serum.—Further progress in our knowledge of the agglutination reaction is announced from the Vienna Diphtheria Antitoxin Institute under Professor Paltauf, by R. Kraus, assistant, in the *Wien. klin. Woch.* of August 12. He secured filtrates through "pukal" of cholera bouillon cultures, absolutely free from germs. To these he added sterile cholera serum (goat serum), and kept at 37 degrees C. In the course of twenty-four hours a precipitate formed, leaving the fluid above it perfectly clear. Analysis of the precipitate showed that it is formed of two albuminoids, one responding to the alkali albuminate and the other to the peptone test. He considers it therefore more than probable that it consists of direct substances from the bodies of the vibrios. Exactly similar results were obtained from filtrates of typhus and plague cultures with homologous serum. But the reaction is totally absent if any other serum is used, and also in experiments with toxin-producing bacteria (diphtheria, etc.).

Mortality Rate Tables.—From the *New York Times* of August 28, we learn that "the table of rates of mortality in the various States of the Union issued by the Hospital Marine Service is practically of little value. Really to learn what is the ratio of *deaths* to *population* we must know accurately both elements of the calculation. It is only in the larger cities, and not in all of these, that either of the elements is known with anything like accuracy. When we read of an average mortality per 1,000 of 4 in Arizona and 20.96 in the District of Columbia, we feel that the latter may be approximately correct, but that the former leaves us as ignorant as we were before. The general fact of a lower death rate may be accepted, but the ratio of its decrease can not be reached with any certainty from this table."

Intoxication from Medicines.—The *Therapeutische Woch.* began to publish in July a comprehensive alphabetic study of the various cases of intoxication from therapeutic measures reported in literature. We note six cases of intoxication from the use of bismuth and several from boric acid, used internally or externally, one from 0.25 gram chloralose administered as a narcotic, one case of extreme amblyopia caused by antifebrin (3 grams taken in half an hour), many cases of argyria after using argentum nitricum extensively, in which the pigmentation was permanent. The similar pigmentation that has been rarely observed after long use of arsenic disappears with the cessation of the medication. An enormous dose of atropin taken by a morphin eater by mistake and followed by a large injection of morphin, ended in recovery. One case of intoxication from the external use of belladonna is reported, already mentioned in the JOURNAL. The favorable effect of atropin in curing intoxication from over-doses of quinin is noticed. Where there is intolerance Aubert follows 0.5 gram quin. sulph. with 0.0005 gram atropin sulph. The article contains careful studies of the various symptoms of the intoxications, including the effects of drugs taken by mistake and for suicidal purposes.

Board of Health an Educational Institution.—The Board of United States General Appraisers at New York decided, June 1, 1897, in the matter of certain protests of Noyes Bros. & Cutler, against the decision of the collector of customs at St. Paul, Minn., as to the rate and amount of duties chargeable on certain imported philosophical apparatus, that the Minnesota State Board of Health, a body created by the legislature and having for one of its chief purposes the collection of valuable scientific information on sanitary matters for diffusion among the people of the State and for the information of the legislature itself, is an educational or scientific institution entitled to the free entry of scientific apparatus under paragraph 585, act of Aug. 28, 1894. The St. Paul City and County Hospital, which it was shown maintains clinics three times a week, which are attended by students of the Minnesota University free of charge, and which has a laboratory for pathologic, bacteriologic, and chemical work, the board of general appraisers holds is also an educational or scientific institution, entitled to free entry under the statute.

Forcible Reduction of Curvature of the Spine.—Calot's method of forcibly pressing the spine into place under anesthesia, with assistants stretching the body by the head and limbs, has proved wonderfully successful in certain cases, but Monod warns that it is strictly contra-indicated in long-standing humps, as consolidation is then impossible, and there is danger of rupturing the meninges and of general infection from mobilizing an isolated and encapsulated focus of tuberculosis or other infection. But in the first months, or even in older humps, when the number of vertebræ involved is not large, reduction is possible and effective and no trace of the deformity remains if a proper spinal corset is worn for a while. Péan has even secured the complete cure of an enormous hump on a girl of 16 who had been confined to her bed for a year or so with paraplegia and suffered intense pain. The *Bulletin de l'Académ. de Méd.* of June 8 contains a cut of the corset recommended by Calot. It is even asserted that by prompt treatment with this method there will be "no more hunchbacks."

The Cream of Tartar Tree.—At a recent meeting of the Leeds Medico Chirurgical Society, Dr. Sharp showed a specimen of the fruit of the cream of tartar tree from the Transvaal, and

said it was stated in text-books that the cream of tartar tree was *Adansonia gregorii*, a native of Northern Australia, but it was not possible to say, in the absence of leaves, etc., whether his specimen belonged to this species or to Adansonia digitata, which is a native of Africa, and is called the baobab, monkey bread, or Ethiopian sour gourd. The fruits of both adansonia digitata and adansonia gregorii have a very similar composition. The extract of the leaves of the former evidently contains an agent which checks excessive perspiration; the pulp of both species is employed as a remedy in dysentery, and the juice expressed from the pulp is used as a drink in the fevers which prevail in the districts. Two German observers found tartaric acid and cream of tartar in the pulp, but there seems some doubt as to the species, while an English observer, whose specimen was also doubtful as to species, found chiefly acid malate of potassium.—London *Lancet*.

Proof of Period of Gestation not Necessary.—In the bastardy case of State v. Sexton, the supreme court of South Dakota holds, July 14, 1897, that, as the subject of inquiry is a matter of common knowledge, pertaining to the course of nature, of which courts will take judicial notice, no proof as to the ordinary period of gestation is necessary. The admission in evidence, in this case, of a table contained in a standard medical work giving information as to the average time from the day of conception to the day of the birth of a mature child, leads the court to remark that, when properly objected to, the hearsay character and uncertainty of a medical work, the author of which being neither sworn nor cross examined, is sufficient to exclude the book and all detached portions thereof, such as the table in question. But when it is disclosed that an expert has based an opinion, expressed on direct examination, upon the recitals of a particular medical work, the court says reference may in some instances be had thereto on cross-examination, as a means of testing his knowledge, and determining the value of such opinion. At the same time, the weight of current authority is clearly against the admission of scientific books as evidence of an issuable fact which may be established by the testimony of an expert.

Cultures of the Gonococcus.—The fact that gonorrheal lesions continue to develop when no cocci can be discovered is explained by Wassermann's recent experiences with gonococci cultivated on the pig serum with Salkowski's nutrose (sodium phosphate and casein). Fifteen c.c. pig serum; 30 to 35 c.c. water; 2 to 3 c.c. glycerin and 80 centigrams nutrose; sterilized by boiling over an alcohol lamp for twenty or thirty minutes and adding, at the moment of using, equal parts of peptonized gelose at 2 per cent., which supplies fluid enough for six or eight plates. He found that by adding peptone bouillon and leaving the cocci in these cultures three days an active specific toxin was evolved, which produces an inflammation at the injecting point, fever and pain in the muscles and joints. This toxin is in the bodies of the cocci, as the filtered liquid did not contain it. He was not successful in any attempts to secure immunization with this toxin. Werthheim and Bröse report a few cases of undoubted gonorrheic peritonitis; the former observing the circumscribed form alone, the latter the generalized. Welander has recently discovered the gonococcus in the blood and injections of a culture at the fifth generation produced acute gonorrhea in an individual who had never previously been affected.—*Meeting of Berlin Medical Association*, July 14.

Address of the General Secretary at the Opening of the Moscow Congress.—The total number of members inscribed to date, August 19, is 7,000. Half of these are our compatriots. In the other half, Austro-Hungary and Germany take the lead with about eight hundred members each. France has sent us more than four hundred members, Italy and Great Britain come next with over three hundred. The United States furnishes one hundred and twenty adherents. All the countries of the world, even the most remote, have furnished a contingent; Mexico, for instance, is represented by more than thirty members. To all we wish to express our unbounded gratitude. We thank especially the ladies, who have not been deterred, by the long and wearisome journey, from visiting our country. We greet in them loyal allies, and we are confident that they will help us to forget the fatigues of our long and assiduous labors. We are unable to offer you many distractions in this dead season, although we know that distractions are absolutely necessary to replace the variety in work to which you are accustomed. Variety to us is synonymous with rest. We bid you welcome to the heart of our country. Endeavor to learn to know us, to the end that, when you leave, you will be our friends, as you are already our allies in the only warfare in which we are interested, the warfare against the ills of humanity.

Botulismus Toxin and Antitoxin; "Sausage Poisoning."—The anaerobic bacillus discovered by van Ermengen in the epidemic of meat poisoning at Ellezelle (*Cbl. f. Bact.*, 1896, No. 19) was not supposed to belong to the ptomain group but to the toxalbumins, which include diphtheria and tetanus. This view is confirmed by the Koch Institute for Infective Diseases, which now announces that antitoxin prepared from this bacillus botulinus is not only effectual in arresting the toxic action of toxin injected nine hours before but is able to save animals twenty-four hours after intoxication, even when the nerve cells are already affected to a considerable extent; also that it gradually brings the cells back to their normal figuration or complete regeneration. The symptoms of botulismus intoxication are abnormal secretion of saliva and mucus in the mouth and throat, blepharoptosis, mydriasis, diplopia, strabismus, dysphagia to aphagia, aphonia, obstipation, retention of urine and sometimes disturbances of the respiration and circulation leading to a fatal termination with the manifestations of a bulbar paralysis. No fever nor mental disturbances. The alterations in the nerve cells of the anterior cornua studied with the Nissl alcohol-methyl-blue stain are: 1. The Nissl corpuscles seem to swell and the granules lose their characteristic concentric arrangement, the chromatophilous elements rarefy and disappear, principally around the edge and one pole of the cell. 2. The disintegration of the Nissl corpuscles, which crumble into powder. The cell then appears somewhat enlarged, the otherwise colorless intersubstance dull blue, apparently scattered with fine dust, and prominent in the center the bright tint and distinct outlines of the nucleolus. In the final stage the cell appears to be almost completely destroyed, the nucleolus alone is still prominent in the amorphous mass with ragged edges, more or less atrophic. The nerve cells do not show degeneration until twenty hours have elapsed after the intoxication and weeks must pass before complete restitution. The experiments that prove complete restitution after antitoxin treatment, fully confirm the announcements of Goldscheider and Flatau in regard to the anatomic restitution of injured nerve cells (*Fortschritte der Medicin*, 1897, No. 7), whose experiments included intoxication with "malon-nitril," counteracted with sodium hyposulphite. They also reported further experiments in this line with Behring's tetanus toxin and antitoxin at the recent Congress of Internal Medicine.—Kempner, Pollack and Brieger in the *Deutsche Med. Woch.*, August 12.

The Moscow Congress.—The executive committee have acquitted themselves of their arduous and complicated tasks with zeal and devotion, with judgment and unmistakable good luck and administrative ability. All our justifiable demands are fulfilled and our hopes surpassed. Even for the transportation of the vast multitudes trending eastward, the preparations were adequate and well planned, as was also the case with the

arrangements for sheltering and taking care of the crowd after it arrived, which numbers 7,300 members, not including the ladies. Trivial complaints are heard on all sides, of course, usually dissatisfaction because the Russians do not speak the language of the speaker, or disgust at the street pavements, which really deserve all the bad that is said about them. The remedy for the wretched pavements is, however, the innumerable little one horse *Iswostschiks*, rapid and cheap, with their blue-bloused, red-belted, good-natured drivers, which enable one to see at his ease this incomparable, indescribable wonder city. . . . As the theater in which the opening session was held only seats 2,500, not all the members were able to gain admittance, but I was awarded a seat on the platform, where I could watch the long spectacle of the opening session *en amateur*. I saw in the side box the high and mighty protector of the Congress, the Grand Prince Sergei Alexandrowitsch, who disappeared after the preliminary address, by the way. I saw the Minister of Public Instruction, Deljanow, pronounce a Latin greeting, but could not hear him. I heard the president of the executive committee, Professor Sklifossowsky of Petersburg, General Secretary Roth and Prince Galizyn on the part of the city, read addresses of welcome in French. I listened then to the volubility of the various national delegates in turn, and the honorary presidents, followed by Virchow's address on "The Necessity of Accepting the Continuity of Life as the Base of all Biologic Conceptions," and Lannelongue's comprehensive study of "Surgical Tuberculosis." It was all good; rather too much of a good thing, and we all drew a breath of relief when we emerged from the heat of the crowded assembly upon the broad square in front of the theater, with the entrancing view before us of the walls, gates and clustering houses of the "inner city," above which tower the domes and steeples of the Kremlin, the entrance flanked by the imposing palace of the Duma and the historic museum, while the eye was attracted again and again to the golden cupolas of the great church to the right, glittering in the sunshine. The overpowering grandeur of the scene and the attendant circumstances brought a fresh enjoyment of life and a wonderful, and to us Germans rather a disconcerting, realization of the elementary vital strength and energies pulsating in this great, mighty, unique Moscow and the nation it represents. —Editorial chat in the *Deutsche Med. Woch.* of August 26.

The Absorption of Iron from the Intestine.—In the *Presse Médicale*, Chessevant states that Cloetta has made some experiments in regard to the elimination of iron in the economy. For this purpose he used ferratin, which exercises no caustic action on the tissues. His experiments demonstrated that in dogs which were subjected to a milk diet, the iron injected into the veins in the form of ferratin was eliminated by the large intestine. Quincke had also ascertained this by microchemic examination. The author also investigated the means of assimilation of this element when administered by the digestive tract, and he found that 20 per cent. of a dose of ferratin introduced into the stomach of a dog subjected to a milk diet, was absorbed. The organic combination of iron with albuminoid matter is necessary in order to insure its absorption. Two dogs were experimented upon as follows: Their food consisted of a soup made of starch, sugar, glucose and distilled water. To the nourishment of the first dog a solution of iron chlorid representing sixty milligrams of iron was added; to that of the second dog a solution of ferratin representing forty milligrams of iron. The villosities of the dog to which ferratin had been given presented the characteristic action of the iron absorbed. The iron contained in the intestine of the other dog was not absorbed and formed masses at the base of the villosities. The organic iron combined with albuminoids is evidently absorbed in the intestine, penetrates the chyle and enters the circulation by the mesenteric veins.—*New York Medical Journal.*

Prostatic Surgery.—The *Centralblatt f. Chir.*, of June 5, contains a detailed study of nineteen operations to relieve hypertrophied prostate by K. G. Lennander, with complete details of symptoms and results. He expresses his conviction that double vasectomy is destined to become very important in cases of dilatation of the bladder without infection, and with only partial retention of urine, but the rule is imperative that a catheter must never be introduced in these cases except under the most pressing circumstances. He states that this operation should be proposed in all cases in which the catheter treatment does not lead rapidly to comparative relief from the symptoms. If cystitis persists in spite of regular catherization epicystotomy should not be postponed. With this vasectomy can be combined, as recovery is apt to be prompter. He also questions whether it is not the best treatment in chronic urinary troubles, with complete retention but no cystitis, to relieve the bladder with punctures and aspiration and supplement this by vasectomy. It may be possible in this way to avoid catheterization and also cystitis. It is Lennander's practice to remove as much as possible of the connective tissue surrounding the vas. One case, a man of 57, still has natural painless erections at night. The testes remain normal to palpation for a long while. Kohler reports seventy vasectomies in the same number, of which three-fifths were cured, one-fifth improved and one-fifth unaffected by the operation.

Reading Medical Books to Jury.—The authorities, both English and American, are practically unanimous in holding that medical books, even if they are regarded as authoritative, can not be read to the jury as independent evidence of the opinions and theories therein expressed or advocated. One objection to such testimony is that it is not delivered under oath. A second objection is that the opposite party is thereby deprived of the benefit of a cross-examination. A third, and the United States court of appeals suggests (Union Pacific Railway Company v. Yates, March 22, 1897), perhaps a more important reason for rejecting such testimony, is that the science of medicine is not an exact science. It also holds that the Iowa statute which makes "books of science and art" presumptive evidence of facts of general notoriety or interest does not change the rule in that State. In this the court follows the construction placed upon a similar statute in California to the effect that the expression "facts of general notoriety or interest" means "historical facts, facts of the exact sciences and of literature or art," all of which, when relevant to a case in hand, may be proven by the production of books of standard authority, rather than by the mouths of living witnesses. At the same time, the court calls attention to the fact that, while the prevailing rule is as stated, a physician is sometimes allowed, while testifying, to fortify an opinion which he may have expressed, by referring to medical works of standard authority on which his opinion is in part predicated; and, when a medical expert has thus indicated the source of his authority, the books themselves may be offered subsequently for the purpose of showing that they do not support the opinion expressed, or that they contradict it.

Reciprocity of Attack and Defense in the Animal Creation.—M. Albert Gaudry, in a review of the course of development of animate nature through the geologic ages, remarks on a curious analogy between the changes experienced by fishes in the secondary age and those which modern warships are passing through. As soon as the thought of armoring vessels took effect, stronger projectiles were devised in order to penetrate the armor. Then the armor had to be strengthened, and just as rapidly as the plates were made thicker, more enormous projectiles were cast; so that the race has culminated in the construction of vessels so heavy that they are almost unmanageable, and thought is turning again toward light, swift boats. With the secondary fishes, too, offensive arms and

defensive armor were developed pace by pace. The teeth were modified till they could crush through the hard cuirasses of the ganoids, and the secondary-age beds are characterized by marine animals thus furnished. Powerful grinding teeth are found in the bony and the cartilaginous fishes, and even in many of the massive reptiles of the trias. The fishes, exposed to enemies whose instruments of offense matched their defensive armor, were obliged to seek safety in flight. Their vertebral column became more solid, so as to furnish a strong support to their spinal muscles, and their tails were shortened and broadened so as to become instruments of energetic locomotion. When this transformation was completed, the carnivorous fishes had no more use for crushing teeth, and they have almost disappeared; no more marine reptiles with teeth like paving stones are found in the tertiary beds or in modern times; and fishes with large teeth working like millstones are rare in comparison to those which have thin cutting teeth; and power resides in agility to reach the goal or escape the danger. Existing fishes are marked by an activity that was unknown in the ancient oceans, and justify the observation of Moquen Tandon, that "the agitation and inconstancy of the sea seem to have impressed themselves on the beings which live in its waves, in the suppleness, rapidity and vivacity of their movements."—*Popular Science Monthly.*

Washington.

HEALTH OF THE DISTRICT.—The number of deaths reported to the Health Department the week ending September 11, was 91. Of the decedents 52 were white and 39 were colored. The annual death rate of the total population was 17.1 per thousand inhabitants, being for the whites 14.3 and for the colored 23. There were 4 fatal cases of malarial fever; 6 of typhoid fever; 5 of diphtheria, and 5 of whooping cough, 2 from pneumonia and 7 from consumption.

WASHINGTON ASYLUM HOSPITAL.—Dr. McDonald, resident physician at the Washingron Asylum Hospital, has resigned, and Dr. Stewart Johnson has been appointed by the Commissioners to fill the vacancy.

PHYSICIANS RETURNED TO DUTY.—The following have returned from vacation: Dr. Samuel C. Busey; Dr. Frank Hyett; Dr. James C. McGuire; Dr. S. O. Richey; Dr. Chas. R. Collins; Dr. J. Tabor Johnson; Dr. W. W. Johnston. Dr. Linn E. La Fetra is on a brief visit to the National Capitol, and will shortly return to his post at the N. Y. City Hospital. Dr. James D. Morgan has returned from a brief visit to Montreal, where he attended meeting of the British Medical Association.

COLUMBIA HOSPITAL.—Dr. J. F. McGrath has resigned the office of Resident Physician at the Columbia Hospital and Dr. Wm. E. West of New York, formerly resident physician of the Central Dispensary and Emergency Hospital, has been appointed to fill the vacancy.

Hospitals.

ST. ELIZABETH'S HOSPITAL at Baker City, Ore., has recently been opened for the reception of patients. It is under the control of the Sisters of St. Francis, and will supply a long felt want for hospital facilities in eastern Oregon.

NEW YORK is to have a new home for girl cripples, to be established by the Sisters of the Annunciation, on Washington Heights. The summer home is St. Elizabeth House at Riverbank, seven miles from Stamford, Conn. Here the beneficiaries are taken on the first of May and remain until October. The new house is an old-fashioned residence with large rooms and verandahs on three sides.

THE CHARITY HOSPITAL, New Orleans, is the recipient of $75,000, given by Mrs. Richard Milliken, widow of a wealthy sugar planter, to found a children's building, including a kindergarten.——The Telfair Hospital, Savannah, Ga., reopened September 1, after having been closed two months for improvements.——The Cottage hospital, Des Moines, Iowa, reopened September 1.——The new St. Francis Hospital, Hartford, Conn., opened August 27.——Conneaut, Ohio, now has a long needed public hospital in the Lyon Hospital just completed.——The Pennsylvania Hospital, Philadelphia, cared for 1,661 emergency cases, treated 1,536 in the out-patient department and 304 in the hospital wards during August, 1897.——The Massachusetts General Hospital is to receive $750,000 from the late Henry Pierce of Boston.——St. Joseph's Hospital was dedicated at St. Joseph, Mo., September 8, an addition having been built at a cost of $4,500.

Societies.

The following recent meetings are noted:

Connecticut—The New Haven Medical Society, ninety-four years old, held its regular session in that city, September 1.

Indiana—The Miami County Medical Association held a meeting at Peru, August 27.

Iowa—The Plymouth County Medical Society was organized at Le Mars, August 24. The Polk Medical Society met at Des Moines, September 7. The Southwestern Iowa Medical Society held a regular session at Osceola, August 19.

Maryland—The Baltimore County Medical Society met at Towson, August 19.

Michigan—The September meeting of the Academy of Medicine of Kalamazoo was held September 7.

New York—The Cortland County Medical Society's quarterly meeting was September 9, at Syracuse. The Medical Society of the County of Queens held its quarterly meeting at Long Beach, Long Island, N. Y., on the afternoon of August 31. "The Diagnosis and Treatment of Fractures" was the chief subject discussed.

Ohio—The Belmont County Medical Society held a meeting at Bellaire, August 31. The Morrow County Medical Society's regular session was held at Gilead, September 6.

Pennsylvania—The twentieth annual reunion of the Pennsylvania and Maryland Union Medical Association was held at York, August 26. The Reading Medical Association's annual meeting was held August 30.

Rhode Island—The Rhode Island Medical Society held its quarterly session at Providence, September 2.

Tennessee—The Sweetwater Medical Association held a regular meeting September 9, at Madisonville.

CHANGE OF ADDRESS.

Bowers, C. E., from Wichita to Anthony, Kan.
Haskin, H. P., from Gaines to Mansfield, Pa.
Martin, Thomas C., from The Lennox to cor. Prospect and Kennard Sts., Cleveland, Ohio.
Porter, G. H., from Benton, Wis., to Steamboat Rock, Wis.
Stewart, F. E., from Detroit, Mich., to care Merck & Co., University Place, New York, N. Y.
Winterbotham, W. H., from Salina, Kan., to 2101 W. Adams St., Chicago.

LETTERS RECEIVED.

Ames, Delano (3), Baltimore, Md.; Anderson, P. L., Chicago; Ayer N. W. & Son, Philadelphia, Pa.
Burrage, W. L., Boston, Mass.; Biedler, H. H., Baltimore, Md.
Caldwell & Co. (Inc'd), New York, N. Y.; Cokenower, J. W., Des Moines, Iowa; Crdell, E. F., Baltimore, Md.; Crafts, Leo M., Minneapolis, Minn.; Collins, A R., Allentown, Tenn.; Colorado Sanitarium, Boulder, Colo.
Dudley, W. H., Easton, Pa.; Drevet Manufacturing Co., New York.
Furay, Chas. E., Chadron, Neb.; Fassett, C. W., St. Louis, Mo.; Fair, H. D., Red Key Ind.
Griffith, J. P. Crozer, Philadelphia, Pa.; Gardner, Ben. S., Marsden, I. T.; Grube, W. W., Toledo, Ohio.
Hollister, O. C., The Dalles, Oregon; Helfman, Joseph, Detroit, Mich.; Högler, Elmer E., Springfield, Ill; Holmes, Bayard (2), Chicago; Hazlett, E. E., Abilene, Kan.; Hull & Co., W. H. H., New York, N. Y.; Hobday, W. A., Halstad, Minn.
Jones, Thomas S., Louisville, Ky.
Kress & Owen Co., New York, N. Y.
Loar, L. T., Darbyville, Ohio; Luckey, J. E., Vinton, Iowa; Laycock, L. C., Alexandria, Ohio; Lord & Thomas, Chicago; Love, I. N., St Louis, Mo.
Mackie, L. V. G., Attleboro, Mass.; Montgomery, Liston H., Chicago; Munson, Edward L., Fort Assinniboine, Mont.; Murray, J. A., Clearfield, Pa.; Morse, S. E., Dixon, Cal.; Moffatt, R. D., Toronto, Canada.
Newman, H. P., Chicago; Newmen, W. H., Grinnell, Iowa; Noble, Thomas B., Indianapolis, Ind.
Ohlmacher, A. P., Gallipolis, Ohio.
Pennington, H. V., London, Ky.; Potter, N. B., Boston, Mass.
Reed, R Harvey, Columbus, Ohio; Rand, D. H., Portland, Oregon.
Schofield, J. F. Shirleysburg, Pa.
Woody, Samuel E., Louisville, Ky.; Wilford, H. B., Marshallville, Ohio; Wade, J. T., Arlington, Neb.; Waller, J. J., Oliver Springs, Tenn.

THE PUBLIC SERVICE.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending September 11, 1897.

Surgeon F. Rogers, detached from the Boston Navy Yard October 4 and ordered to the Norfolk Navy Yard.

Medical Inspector J. L. Neilson, detached from the Norfolk Navy Yard September 30 and ordered to the Boston Navy Yard October 4.